5-2012

Sustainable Ski Resorts in the State of Utah: Working Toward the Future

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SUSTAINABLE SKI RESORTS IN THE STATE OF UTAH:

WORKING TOWARD THE FUTURE

by

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A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Human Dimensions of Ecosystem Science and Management

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UTAH STATE UNIVERSITY
Logan, Utah

2012

ABSTRACT

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by

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Utah State University, 2012

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Enacting environmentally sustainable practices among ski resort areas within the U.S. has become an issue of mounting concern and attention. The state of Utah generates seven billion dollars a year from its tourism industry, with the majority coming from visitation to Utah's fourteen ski resort areas. The state of Utah is highly tourism dependent and deems this sector as a central factor in the state's economy. Thus, good environmental practices among these ski resort areas is not only important in their daily operations, but also to local community businesses and stakeholders who depend on a consistent influx of tourism dollars to remain economically viable.

The ski resort areas of Utah vary in their level of implementation, reporting, and marketing of their specific environmental practices, and initiatives. This has led to gaps in reporting by each ski resort area and a lack of understanding among local business owners and community members in regards to what current environmental efforts are being undertaken by these resort areas, as well as their plans for the future.

A qualitative study aimed at exploring the current level and future plans for the implementation of environmentally sustainable practices among Utah's ski resort areas should help to create a more in-depth understanding of what each resort is doing to address this issue. It also serves to create a baseline summary report of the state of Utah's ski resort area environmental practices as a whole. Fifteen key informant interviews were conducted throughout the ski resort areas of Utah with resort employees ranging from sustainability coordinators and marketing managers, to operations and budget directors. Methodologies used for the study and some of the preliminary findings are presented. These findings will focus on the current and future implementation of environmentally sustainable practices at each Utah ski resort area. Results from this study are intended to bridge the lack of communication amongst ski resort areas and local community members and businesses. This can help in creating a more interdisciplinary approach to this issue and generate new ideas and angles in approaching environmental sustainability among ski resort areas.

(122 pages)

PUBLIC ABSTRACT

Sustainable Ski Resorts in the State of Utah: Working Towards the Future

Andrew Call

The Utah State University Extension branch funded a research project designed to meet an identified need and create a baseline in knowledge of the implementation of environmentally sustainable practices among Utah ski resorts. Because of the potential impacts of climate change and unsustainable practices that negatively impact both the biophysical and human/cultural aspects of these environments, the ski resort industry is facing an uncertain future both environmentally and economically. However, very little is known about this issue, or how to address it. Collecting baseline information on the subject of environmental sustainability amongst Utah area ski resorts is crucial to ensure the sustainability of the Utah ski resort industry as a whole and will serve to benefit in creating new strategies and plans on how to properly address this issue into the future.

This project aims to address this need and complete these project objectives:

1. Determine the current level of knowledge, awareness, and implementation of environmentally sustainable practices at Utah ski resort areas.
2. Determine Utah ski resort future plans for the implementation of environmentally sustainable practices, including the motivations for such implementation.
3. Work collaboratively with additional stakeholders to decide and implement the best environmentally sustainable practices for the future of the Utah ski resort industry.
4. Disseminate research project and report findings to Utah ski resort industry and other vested interest groups.

Various audiences benefit from this research: first and foremost, Utah's ski resort industry, ski resort visitors, tourism-oriented businesses, vested stakeholders, environmental organizations, and local communities and residents. Ski resorts benefit in receiving a baseline on their environmental practices and their perceived importance, which can prove to be a valuable marketing tool. The other audiences, especially stakeholders and local communities and residents, benefit in gaining knowledge of how committed Utah ski resort areas are in reducing their environmental impacts. This has a direct effect on local communities and businesses that are economically dependent on Utah ski resorts for the visitors they attract and associated visitor spending. It is in these communities best interest to know and understand what the ski areas are doing to offset their environmental impact and footprint to ensure an economically viable future for Utah ski resort areas and their dependent communities. Lastly, given that this project is funded through USU Extension, it would further strengthen the educational and outreach efforts of Extension in regards to sustainability, especially in the emerging area of winter sustainability. This may result in cost savings for all parties involved due to the ability to accurately define, predict, and plan for the environmentally sustainable practices that will benefit into the future.

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INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction

With the increased focus and concern generated from climate change and global warming, ski resort areas are in need of heightening their sustainable environmental practices in order to ensure successful winter seasons and appeal to the environmentally friendly niche of visiting patrons. Veronica Tonge states, "The environment has not been at the forefront of the marketing of resorts and that there is a requirement for the education of skiers" (Tonge, 2008). This can create the problem of alienating potential visitors who value the environmental efforts of the areas they visit, especially with the growing trend of "ecotourism" defined as "responsible travel to natural areas that conserves the environment and improves the well-being of local people (The International Ecotourism Society, 1990). Of the 14 ski resorts that currently operate in the state of Utah, their environmental practices and concerns are varied, and reported or promoted at different levels. Some resorts choose to consistently promote their environmental practices via websites focused on the subject, mailers sent to visiting patrons, or various forms of promotion regarding the environmental certifications they have received. Other resort areas in Utah choose to keep the reporting and promotion of their environmental practices to a minimum, or simply do not state their environmental practices publicly. As a result, a gap is created in the ability for resort areas to effectively make resort patrons, the general public, community area businesses, and resort employees aware of the level of environmental practices they are currently undertaking. Properly

educating these groups can be a crucial measure as these resorts move into the future with concerns such as environmental awareness and climate change on the rise.

Current efforts to address this issue are limited to a nationwide program titled the Sustainable Slopes Program (SSP). The SSP was developed in 2000 in collaboration with a number of partnering organizations including conservation charities and environmental protection foundations, each year this program works to help rate U.S. ski resorts on 21 comprehensive environmental principles that enable ski resort operators to make sustainable use of natural resources (National Ski Areas Association, 2010). This information is then made public on their website, and grants are awarded to resorts with the highest level of sustainable and efficient practices. These grants are generally funded by outside companies involved in the ski industry that are considered environmentally conscious, such as Clif Bar & Co and the Natural Resources Defense Council (NRDC). However, the drawback as stated by Tonge is, "Ski areas are expected to implement annual self-assessment of their environmental performance, there is no external validation and no penalties for non-compliance. It takes an 'avoid, minimize, mitigate' approach to natural resource management and aims to promote 'beyond compliance' (Tonge, 2008). Thus, through this program, not only do ski areas voluntarily participate, but they also do a self-report of their environmental practices. Gaps in reporting from year to year are created due to this type of compliance making it difficult to create a continuous timeline of the environmental practices of participating resorts due to the fact that they may choose to be involved in the SSP program one year, but not the next. Furthermore, the SSP program has not experienced a large amount of growth since its inception. One hundred and sixty U.S. ski areas enrolled in the inaugural year 2000, but

by 2006 this had increased to only 178 (36% of U.S. resorts) (Tonge, 2008). Interestingly, the Aspen and Vail ski resorts who have received much acclaim for their environmental actions, no longer participate in the SSP program and instead have developed their own policies (Tonge, 2008).

Ecotourism has increasingly become an important niche of the tourism and ski resort market in U.S. communities who derive the majority of their economic base from tourism dollars. In 2004, ecotourism and nature tourism were growing three times faster than the global tourism industry as a whole. Also, according to *Travel Weekly*, sustainable tourism could grow to 25% of the world's travel market by 2012, taking the value of the sector to approximately $473 billion a year (Orange County Green Chamber, 2010). The tourism sector continues to grow and become a driving force in the state of Utah's economy. This sector is a $7 billion-a-year generator for the state and in regards to ski areas; the 2010/2011season saw its 2nd highest visitation numbers with 4.2 million skier days (Utah Tourism Industry Coalition, 2011). Lastly, Utah is fast becoming the preferred skier destination area over neighboring Colorado. This is due to Utah possessing resorts that are rarely overcrowded and the ability for visitors to be on the ski slopes within a half hour of their plane arriving at Salt Lake City International Airport.

With the combination of ecotourism and the state of Utah's tourism on the rise, ski resorts in Utah serve to gain substantially from adopting and promoting more environmentally sustainable practices. Taking this approach will create effects upon the economy in both direct and indirect ways. Directly, environmentally conscious tourists will gravitate towards ski resorts that uphold the environmental practices they value. Indirectly, tourist consumer spending in local hotels, restaurants, and other various

businesses stimulates the economy of Utah. However, much like the Sustainable Slopes Program, the ski resorts of Utah vary greatly in their level of adoption and promotion of green environmental practices, and thus could be straggling in their ability to fully capitalize on the ecotourism sector of the tourism industry.

Research Objectives

Through this research we aim to address this gap in Utah ski resort areas consistently reporting, promoting, and updating the environmental practices they are currently undertaking and planning for the future. Through funding provided by Utah State University Extension, we hope to collaborate with ski resort areas in Utah and develop a program/website that promotes the environmental practices of these areas, as well as make available a number of "fact sheets" through the Institute for Outdoor Recreation and Tourism that detail the specific "green practices" of each resort area. Conducting this research will create a baseline information level on the sustainable practices of Utah area ski resorts, and serve to create new ideas for the adoption and promotion of these practices into the future. Our methods and procedures for conducting this research will consist of three phases:

Phase 1:

1. Extensively review and research current literature related to the environmentally sustainable practices within ski resort areas. This will further serve in the development of data collection methodology.

2. A semi-structured interview instrument will be designed and administered to key informants of Utah ski resort areas, such as resort general managers, operations managers, and sustainability specialists if resorts possess such a position.
3. A refined semi-structured interview instrument will be administered to a larger sample of Utah ski resort area general managers and personnel. This stage will rely on a "snowball" sampling technique in order expand the sample size wherever possible.
4. The results of these key informant interviews will be disseminated and reported to Utah's ski resort and tourism industry, as well as any other stakeholders possessing interest in the subject matter.

Phase 2:

1. An intercept survey will be created and pilot tested on an initial sample of visitors at specific ski resort areas in the state of Utah.
2. Following pilot testing, a refined intercept survey will be administered that encompasses a larger sample of visitors and Utah ski resort areas.
3. The results of these visitor intercept surveys will be disseminated and reported to Utah's ski resort and tourism industry, as well as any other stakeholders possessing interest in the subject matter.

Phase 3:

1. Work collaboratively with Utah's ski resort and tourism industry and other stakeholders for the implementation of best "green practices" in the industry in the future.

2. Disseminate results of the research project.

My research focused directly on Phase 1 of the research project, and through completion of this phase aimed to address three key research questions. First, what is the current level of knowledge, awareness, and implementation of environmentally sustainable practices held by Utah area ski resort managers and personnel? Second, what future plans or motivations (if any) do Utah area ski resort managers and personnel have towards enacting more environmentally sustainable practices at their specific resort area? Third, determine whether Utah area resort managers and personnel deem current programs such as the Sustainable Slopes Program useful and effective in addressing the environmental practices of ski resort areas, or do new programs or ways of addressing this issue need to be utilized? Based on findings and funding sources, Phases 2 and 3 will be enacted in the future after my completion of Phase 1 of the research project.

CHAPTER II

REVIEW OF THE LITERATURE

Climate Change and Ski Resort Areas

Current literature that addresses the environmentally sustainable practices of ski resort areas is largely varied in its approach and scope of measurement. Climate change impact assessments of the ski industry have been conducted in a number of countries, and all project varying negative consequences for the industry (Scott, McBoyle, Minogue, & Mills, 2006). Elsasser and Burki (2002) who studied Swiss ski resort area climate change and the effects on the tourism industry projected that climate change in the 21st century could reduce the number of "snow reliable" resorts from 85% to between 44% and 63%, which would result in an estimated 10% direct revenue loss in winter tourism dollars (Elsasser & Burki, 2002). Indirect revenue losses affecting local businesses and communities could push the number closer to 30% (Breiling, Charamza, & Skage, 1997). Fukushima, Kureha, Ozaki, Fujimori and Harasawa (2002) conducted a similar study with 61 Japanese ski areas, but focused more on temperature change. Concluding the study, estimates were made that a three degree Celsius increase in temperature could reduce skier visitation numbers by 30% based on the number of operation days resort areas would lose due to warmer climate (Fukushima et al., 2002). Much like the study in Switzerland, indirectly the local businesses and community would experience decreases in revenue due to these changes. Hennessey's (2003) study in Australia analyzed the use of snowmaking machinery at ski resort areas to offset the sporadic seasons and warming temperatures created by climate change. Six resort areas were studied and it was

concluded that even with a sufficient investment in snowmaking technology, the effects of climate change would only be offset until 2020 (Hennessey et al., 2003). Snowmaking technology presents a challenge in itself. It has been shown to be energy inefficient and quite costly. New systems can cost upwards of $40,000 per acre to install and $1700 per hour to operate (The New York Times, 2001). Thus, snowmaking technology could be considered an expensive "quick fix" to the issue of combating climate change among ski resort areas. The creation and adoption of more environmentally sustainable practices focused on long-term prevention will need to be created to counteract climate change.

The large majority of these studies have focused their efforts in Europe, Canada, and Australia, with research in the United States on this issue being quite limited. Of the studies that do exist, these have concentrated on the northeastern area of the U.S. Although beneficial in the research conducted, this area is not a central hub for ski tourism, and thus may lack in fully conceptualizing the environmental practices and attitudes of ski resort area managers, personnel, and communities that are highly dependent on tourism dollars to support their local economy.

Diffusion of Innovations Theory

Smerecnik and Andersen's research most closely examines the diffusion of environmentally sustainable innovations in U.S. hotels and ski resort areas. They conducted research in the form of electronic surveys distributed to 49 medium hotels and ski resorts across the entire U.S. (Smerecnik & Andersen, 2011). The methodology applied focused on Rogers (2003) diffusion of innovations theory (DIT). DIT has

become a leading model for understanding the adoption of more sustainable innovations in a variety of fields (Smerecnik & Andersen, 2011). DIT is the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 2003). The goal is to achieve adoption of a new innovation as quickly and efficiently as possible while also creating an atmosphere in which this innovation is considered in future planning operations. In this case, Smerecnik and Andersen used DIT to measure the successful level of adoption of environmentally sustainable practices among these resort areas. Their study concluded the importance of perceived simplicity and relative advantage in adoption of more environmentally sustainable innovations among these resort areas was a central focus (Smerecnik & Andersen, 2011). Thus, as long as new environmental initiatives are fairly easy to undertake and show clear advantage for resort areas in the form of natural resource protection, and environmental promotion and marketing, they are more likely to take on these environmental actions and consider these in future planning options.

Environmental Initiatives: Europe vs. United States

An environmental initiative currently being incorporated among European ski resort areas, which entails characteristics of DIT, is the EU-Eco-Audit. This approach is being adopted to mitigate the ecological effects of ski resort areas. It represents a market-based economic instrument, which enables companies to show their environmental awareness and adopt environmentally friendly behavior, while at the same time striving to optimize their operating procedures (Proebstl, 2006). Instrumental to this approach is the difference in the European and U.S. model of ski area management. The United

States functions on a corporate model in which the ski area generally leases their land from the United States Forest Service. Europe uses a community-based model, which is characterized by specialized independent service providers operating in a decentralized way. No single company or organization has any dominant power or ownership (Tonge, 2008). In this case, the existing community focused around the resort area is composed of locally owned businesses that possess multiple owners of the facilities. This creates a setting in which the entire community is vested in the success of the ski resort area, and thus concerned with the issue of environmental sustainability (Tonge, 2008).

The EU-Eco-Audit is better able to achieve success in the community based European ski resort model. The audit represents a less forceful approach than traditional European regulations, and by adopting this system ski resorts accept their own role in environmental management and responsibility. Incredibly crucial to this audit framework is the idea of permanent monitoring in order to prevent gaps in reporting and consistent implementation of environmentally sustainable practices (Proebstl, 2006). In contrast to the North American system, this EU-Eco-Audit presents a proactive environmental management system with a more preventative perspective (Williams & Todd, 1997). It has achieved success due to the high number of community entities involved. With the local community more intricately engaged in the inner-workings of the resort areas they rely on to remain economically viable, they are much more likely to work collectively on creating and implementing present and long term environmentally sustainable practices for the area. In this situation, environmental decisions are made that serve to benefit the community as a whole, not just the corporate entity that owns and operates the resort area.

It was revealed that these ski resort areas in Europe profit from the EU-Eco-Audit in four separate categories: competition, reduced cost, reduction of risk, and improved organizational structure (Schneider & Furnrohr, 2002). A competitive advantage is gained in the form of:

1. Increased attraction for environmentally aware clients (ecotourism)
2. Environmental concerns are positioned as key criteria for the company
3. Improved positive image with resource management agencies and the local community
4. Improved competitive position during application for large resort area events.

Cost reduction effects include:

1. Reduced cost for compiling support materials for permits
2. Reduced insurance premiums
3. Lower bank rates
4. Reduced requirements of expensive cultivation in case of wider damages.

Operational and environmental risks are reduced through:

1. Increased knowledge of potential damages over entire ski area
2. More thoroughly documented chain of decisions, in case of legal challenges.

Lastly, organizational structure is improved via:

1. Increased employee knowledge of resort areas environmental practices
2. More detailed knowledge about the affects of management on nature and landscape
3. Reduced bureaucratic efforts

4. Increased knowledge about winter and summer tourism (Schneider et al, 2002).

EU-Eco-Audit

Proebstl, through his research, found improvement of the organizational structure from implementation of the EU-Eco-Audit to be largely important, but also the most difficult to achieve. It is essential that employees from all levels and departments participate in the audit (Proebstl, 2006). This helps to gather multiple viewpoints from different departments, and evaluate the strengths and weaknesses of what environmentally sustainable practices should be undertaken by the resort area. This communal form of implementation serves to better involve employees in the inner-workings of the ski resort they are employed by, and also creates a grassroots marketing campaign in which employees will possibly promote the environmental practices of their resort area via word-of-mouth. Thus, the EU-Eco-Audit works to involve all facets of the community. From ski resort area employees to local business owners, all are part of or at least aware of the environmental practices of their resort area. This level of community involvement helps to foster an atmosphere in which members work collectively to ensure the present and future sustainability of the tourism revenue flowing into the community from the ski resort area, as well as that of the natural resources being affected.

The main idea behind the EU-Eco-Audit is that for winter sports patrons visiting the area, does it make a difference for them to visit a resort that is environmentally sustainable and eco-certified compared to those that are not (Proebstl, 2006)? Schmid (2003) worked to find whether resort visitors in Europe were more attracted to those

areas possessing this type of certification or various ecological awards. Through questionnaire research, ski resort visitors were categorized into three different types:

Type 1: The motivated one. This group is highly likely to take into consideration the environmental efforts and certification of the ski resort areas they visit.

Type 2: The interested one. This group is basically interested in the environmental certification of resort areas. They are more likely to take it into consideration if it is clearly and effectively communicated to them.

Type 3: The indifferent one. This group is not overly concerned with resort environmental practices or certification and does consider these actions important when choosing a destination (Schmid, 2003).

Of those patrons who responded to the questionnaire; 16% belonged to the Type 1 category (motivated), 30% to the Type 2 category (interested), and 42% to the Type 3 category (indifferent). Possible reasoning for this low acceptance rate could be the general attitude towards environmental awards and certifications. Over half of visiting resort patrons only trust environmental certification if they are provided more information on what exactly it entails, a seal of approval is simply not enough (Proebstl, 2006). Enhanced efforts to relay the environmentally sustainable practices of ski resort areas to the general public is key to educating and retaining this sector of clientele, and creating a locality that is able to cater to the growing ecotourism division. A more marketing centered rather than certification oriented approach to promoting sustainable environmental practices, may serve to reach a broader audience of possible visiting patrons.

Environmental Regulations

As enhancing the environmental practices of ski resort areas in the U.S. becomes an issue of mounting concern in future planning efforts, a central challenge is deciding which regulation format will be most effective. Currently, U.S. ski resorts operate under a purely voluntary environmental regulation format. The leading program, as mentioned before, is the Sustainable Slopes Program (SSP), established by the National Ski Areas Association, in partnership with the U.S. Environmental Protection Agency, the U.S. Forest Service, and other federal agencies and organizations participating. This form of voluntary regulation compliance is divided with its share of supporters, and skeptics. Supporters believe voluntary programs provide market and regulatory benefits to participants and thus can effectively promote beyond compliance environmental protection from these resort areas (Arora & Cason, 1996; Khanna, 2001; Lyon & Maxwell, 2000; Rivera, 2002). It is also viewed as a valuable information tool that allows ski resort areas within the U.S. to better understand the environmentally sustainable practices of other resort areas, and possibly apply these actions to their own area. In addition, it has been suggested resorts that voluntarily comply with more environmentally sustainable practices are more cost efficient, improve their regulatory flexibility, and help to promote technological innovation as a whole (Delmas, 2002). Skeptics assert that ski resort areas are motivated to participate in voluntary programs such as the SSP in order to prevent more stringent environmental regulations, or mask their poor environmental performance (Andrews, 1998; Arora & Cason, 1996; Delmas, 2002; Harrison, 1999; Khanna, 2001; Rivera, 2002). Additionally, Rivera and de Leon

(2004) found that higher participation in programs such as SSP showed a significant relationship with lower environmental performance. This was attributed to ski resort areas trying to improve their environmental image, without actually doing anything, i.e. "greenwashing" (Rivera & de Leon, 2004). Additionally, these skeptics question the supporters' claim that programs of a voluntary nature can provide significant market incentives for ski resort areas that promote beyond compliance (Andrews, 1998; Rivera, 2002). Thus, due to the voluntary nature of the current environmental regulations programs available to U.S. ski resort areas, the issue arises in being able to properly calculate whether resort areas are truly undertaking these environmentally sustainable practices, or simply using them to appear environmentally friendly in the public eye. It remains to be seen how long U.S. ski resort areas will be able to operate under a voluntarily oriented environmental program. As we look towards the future, and climate change becomes an issue of mounting concern, the possibility of introducing mandatory environmental regulations for these resort areas increases.

Local Community and Economy Effects

Climate variability not only affects the economic aspects of the ski resort area, but also the surrounding community and local economy. If ski resort areas continue to experience winter seasons that are not producing a consistent snow-pack, the effect is projected outward and local businesses dependent on these resort areas to generate revenue begin to suffer. Unlike neighboring Denver, Colorado, the state of Utah is incredibly unique in what it is able to offer local and visiting skier patrons. Focused around the Salt Lake City, Park City, Provo, and Ogden areas, nowhere else in the United

States is a large urban/metropolitan area located so closely to 10 world-class ski resorts. This creates a complex dynamic in these areas where a number of businesses and operations are solely contingent on consistent tourist visitation to the ski resorts, in order to remain viable. These businesses are much more at risk of economic instability than businesses located in other metropolitan areas, due to their proximity and reliance on the ski resorts. Thus given the significance of winter tourism in these areas of Utah, the concepts of both "sustainable tourism" and "sustainable development" apply directly to this region. A broad differentiation can be made between these two concepts. Sustainable tourism places emphasis on customer and marketing considerations, while sustainable development focuses on the ecological considerations of certain areas (Holden, 1999).

The case of Utah area winter tourism largely falls under what Coccossis (1996) refers to as 'economic sustainability of tourism" and Hunter (1996) labels as the 'tourism imperative'. In this scenario the aim of development is primarily concerned with satisfying the needs of tourists and industry players (ski resort areas and local businesses). The central justification of this approach is that tourism development is to be encouraged and seen as acceptable if developing other sectors of the economy are viewed as more environmentally detrimental than tourism (Hunter, 1996). However, this scenario fails to consider that the negative consequences of tourism development are cumulative and incremental. Industry players may see short-term economic gains without realizing the long-term environmental impacts they are creating. This may result in cutting tourism revenue for Utah area resorts and businesses extremely short if environmental impacts are not assessed and treated as a critical area of concern in order

to ensure long-term stability for both sectors.

The ideal scenario developed by Hunter (1996) is deemed "environmentally led tourism." The main aim in this setting is to make the link between the success of the tourism industry and environmental quality so obvious to all stakeholders involved, that environmental stewardship becomes a priority (Holden, 1999). This approach to tourism development produces some central benefits. First, it creates longevity in natural resource protection, and helps to extend the lifespan of tourism dependent communities. Second, it fosters collaborative management among all entities involved. Through this approach, ski resort areas, local businesses, environmental groups, land management agencies, and other parties are much more likely to work collectively and effectively given they all realize the benefits of improved environmental practices. In the state of Utah, a group exists that fosters this approach, Cottonwood Canyons Foundation. This group partners with concerned citizens, organizations such as the Wasatch-Cache National Forest, Salt Lake City Watershed, Alta, Brighton, Solitude, and Snowbird ski resort areas and over 200 volunteers to conduct educational programs and environmental improvement projects (Cottonwood Canyons Foundation, 2011). This foundation adopts an interdisciplinary style which serves to not only involve multiple entities in increasing and improving environmentally sustainable practices in these areas, but attached to their actions is the protection of these canyons that draw a large number of tourists and thus more money into the state of Utah's economy. This circumstance fosters and helps support the ever-growing eco-tourism sector of the tourism industry. This generates a chain reaction of positive benefits among all who are involved. Ski resort areas see higher visitation numbers, these visitors frequent local businesses, hotels, and restaurants,

and the community becomes a known eco-tourism hub through word-of-mouth and effective environmentally sustainable promotions and marketing.

In contrast to the Cottonwood Canyons Foundation, a group entitled the Ski Area Citizens Coalition exists that gives yearly grades to U.S. ski resort areas based on their environmental practices. They work to ensure that ski area management decisions, either by the Forest Service, the ski companies, or local governments, are responsive to the needs of real environmental protection, local communities, and the skiing public. Each year resorts are given a letter grade (A through F) on their current environmental practices and what improvements they have made. As of this current year, no Utah ski resort has received a grade lower than a C, and three are on the top 10 list for environmental practices and improvement. This coalition serves as a third party viewpoint on this issue and presents an in-depth analysis of ski resort area environmental sustainability, without the possible bias resort area employees may possess on the issue (Ski Area Citizens Coalition, 2011).

The state of Utah provides an ideal research setting in which to gather data among the various ski resort areas and tourism dependent communities to help in determining which scenario best meets the needs of all who are involved (Phase 1). Through our research we hope to be able to devise a plan that benefits ski resorts and community members, and serves to lessen the impacts on the local environment and natural resources.

CHAPTER **III**

METHODOLOGY

Measuring Perceptions

This research project focused on developing and implementing a semi-structured, key informant survey instrument that was administered to an initial sample of Utah ski resort area general managers, operations managers, and any other personnel involved with the environmental actions of the resort areas. After pilot testing, a refined semi-structured, key informant interview instrument was administered to a larger sample of Utah ski resort area management and personnel involved in ski area operations along the Wasatch front and back. Whenever possible, a "snowball" sampling technique was utilized in order to enlarge the sample.

This form of interview research served to address some key challenges. First, it helped to determine the current level of awareness, knowledge, and implementation of the environmentally sustainable practices possessed by Utah area ski resorts. Second, it aided in determining the future plans of each ski resort area implementing environmentally sustainable practices, as well as their motivation for taking such actions. Third, it aided in fostering a collaborative work environment among stakeholders, ski resort areas, and various environmentally conscious interest groups, and thus likely improved interaction and relationships. Lastly, these findings will be reported to Utah's tourism industry in order to bolster community involvement in the environmental practices of the ski resort areas they depend on to generate revenue.

Aspects of diffusion of innovations theory, the Sustainable Slopes Program, and

the EU-Eco-Audit were employed in this form of interview research in order to gauge the level of acceptance and knowledge of each program, their pros and cons, and what improvements, revisions, or new types of programs could possibly be created

Study Context

The findings of the key informant interviews were analyzed qualitatively. This form of analysis looks for patterns and common trends early in the stages of research when data is still being collected. It is not quantitative in nature, which relies more on number and statistical based research analysis. Rather, qualitative analysis is much more exploratory in nature and hinges on developing explanations and generalizations from the context of the data gathered. The overall goal is to "organize specific details into a coherent picture, model, or set of interlocked concepts" (Neuman, 2006). Furthermore, True (1983) has suggested, "the objective of exploratory research is discovery, as such exploratory studies do not usually include formalized hypotheses or rigorous statistical tests." Thus, the goal was to achieve the specific research objectives of determining the current and future implementation of environmentally sustainable practices among Utah ski resort areas, rather than prove or disprove a specific hypothesis. The exploratory nature of this study regarding Utah ski resort environmental sustainability was the result of there being a genuine lack of similar research using the state of Utah as a case study. Perceptions are equally difficult to capture and hard to explain. To alleviate this challenge, participants were asked to take part in a semi-structured interview that consisted of mostly open-ended questions. Central to the qualitative research approach, open-ended questions were chosen in order to allow participants to more accurately

describe in their own words or opinions the environmentally sustainable practices of the ski resort area they are employed by, rather than be restricted to predetermined categories which can limit participant responses (Sewell, 1997). By undertaking this less restrictive research approach, our study may help in gaining a better understanding of how Utah ski resort area personnel currently view environmentally sustainable practices, their role in the development of such practices, and plans for the future implementation of such practices at each individual ski resort in the Utah area.

Sampling Techniques

Key informant interviews were conducted with 15 Utah ski resort area employees who were identified as knowledgeable and influential individuals in regards to environmental sustainability within the resort area they are employed by. A purposive sample of employees in varying positions was selected. Examples of those selected included resort operations managers, budget directors, marketing directors, and in certain instances sustainability/environmental coordinators. A snowball sampling technique was then used to identify others whom employees considered possessing a knowledgeable background that would be beneficial to the study. This was done following each interview by asking the participant to identify other possible employees deemed beneficial to the researcher.

Because of their role in planning, implementation, and funding of environmentally sustainable actions at Utah ski resort areas, these participants were chosen due to these influences. They were also chosen based on the projection of them being knowledgeable of Utah's tourism industry and where environmentally sustainable

ski resort area practices fit within that sector as effective information and marketing tools. Those interviewed were from eleven different Utah area ski resorts.

The sampling techniques used were non-random, non-probability, due to the fact that specific criteria was used to pick particular individuals to participate (Huberman & Miles, 2002). Therefore, this sample cannot be considered a representative sample and thus possesses internal, rather than external generalizability. This is a central component of qualitative research. The goal usually is not to make inferences about the underlying population, but to attempt to obtain insights into particular educational, social, and familial processes and practices that exist within a specific location and context (Onwuegbuzie & Teddlie, 2003). This form of sampling is a nested sampling design. Nested sampling design works toward facilitating credible comparisons between two or more members of the same subgroup, wherein one or more members of the sub group represents a sub-sample of the full sample. Nested sampling is a large aspect of grounded theory design, and as noted by Charmaz, "the aim of nested sampling design is to refine *ideas,* not to increase the size of the original sample" (Charmaz, 2000). It is the central design used in selecting key informants and the "voices" of these key informants are used in attaining data saturation, theoretical saturation, and informational redundancy (Onwuegbuzie & Teddlie, 2003). This form of design closely follows a "snowball" sampling technique and exhausts all forms of data collection until the same patterns of data begin to reveal themselves and the sampling is complete. In the case of our research, the focus is specific key informants at each of the ski resort areas in the state of Utah and the context of environmentally sustainable practices within each one.

Responses from participants within this research project represent a small and specific subgroup of the population, thus the value of the data is internally generalized. This subgroup was chosen for this study due to their likely influence in the creation, adoption, and continued use of environmentally sustainable actions among Utah ski resort areas. The interviewing and continued snowball sampling ended when limited additional and useful information was being reported, the information was beginning to appear repetitious, and no new informants were being recommended by study participants. All of these indicators were prevalent following the collection of 15 interviews.

Key Informant Instrument

Study participants were identified either through contact information available via ski resort area websites, or via a telephone call to the resort area. Individuals were asked to participate in a semi-structured interview consisting of open-ended questions. The interview instrument consisted of 16 predetermined questions that aimed to address the key objectives of the study. These questions were developed so as to try and pinpoint and better understand participant's perceptions and motivations in regards to this particular issue. It was categorized around three specific areas focusing on the current environmentally sustainable actions, future plans for these actions, and visitor perceptions of environmental practices at Utah ski resort areas.

Each question on the instrument was framed in a way that allowed the interviewer to probe beyond the answers to the predetermined questions. This probe element was chosen in order to encourage flexible and more extensive responses from study participants, thus increasing information volume and validity. Participants were also

given the option at the end of the interview to include additional comments or return to a previous question to expand upon their response. This approach was undertaken to also increase information volume and validity. The open-ended questions were asked in a consistent and uniform manner in order for the interviewer to avoid creating any bias within the format, or interview process.

Interview Process

Informants were initially contacted via email. When not available on resort area websites, informant contact information was obtained via a telephone call to the area. As part of the email, an introduction to the project including a basic outline, topics that will guide the interview discussion, and the confidentiality aspects were outlined in detail, and sent as an attachment to each informant. Informants were told that purpose of the interview was to create a more detailed baseline of what each Utah ski resorts areas perceptions and actions were regarding environmentally sustainable resort practices. Participants agreeing to be interviewed were then sent a letter of information further explaining the purpose, benefits, funding aspects, procedures, confidentiality, and voluntary nature of the study.

Each of the interviews was recorded regardless of whether the format was face-to-face, or via telephone. This was done to allow the interviewer to concentrate on the interview and also served to preserve all the information gathered in the process. The recorded interviews were then transcribed for analysis and coding procedures. Field notes were taken during the interview process that consisted of identifying the participant's position at the resort area, length of time in said position, length of residence

in Utah, previous residence (if any), and educational background. Minor field notes were also added when asking the interview questions wherever deemed appropriate.

Data Analysis Techniques

The data collected from the key informant interviews were analyzed using an open coding method. In open coding, during the first analysis of the collected data the key points and themes are coded based on similarities. In the second analysis of the data, these codes are grouped into specific concepts, and from these concepts categories are formed that exemplify what area in which each interviewee fits (Strauss & Corbin, 1998). These categories were created to show what areas of environmental sustainability and best "green practices" ski resort managers and personnel are most concerned about, as well as create a baseline of their current level of knowledge on this issue. These categories also show where emphasis is being placed on the future implementation of these environmentally sustainable practices and the involvement of community members and other stakeholders in the Utah ski resort industry.

Following data collection from the key informant interviews, interpretation via transcription of the interview recordings was undertaken as soon as possible. Analyzing closely prior to collection helps to organize the data and make it less overwhelming. Interpretation also forces the researcher to think during the data discovery phase and helps to recall important key aspects of each interview conducted (Miles & Huberman, 1984).

In addition to the creation of a final report, Utah ski resort "best green practices" fact sheets can be developed and distributed through the Institute for Outdoor

Recreation and Tourism Utah State University Extension. This could also lead to the creation of educational workshops if there is a perceived demand. Since little research exists that focuses directly on the implementation of more environmentally sustainable practices among U.S. ski resort areas, our research project has great potential for being published in potential journal outlets. Lastly, findings of our research project could also be presented at research symposia and conferences, where deemed appropriate.

CHAPTER IV

ANALYSIS OF DATA

This study closely followed an exploratory form. Its purpose is to examine the current and future implementation of environmentally sustainable practices amongst Utah ski resort areas. Participants in the study were chosen non-randomly and used based on their position at the ski resort area, and the specific input they could contribute to the study. Results of this study cannot be generalized amongst all ski resort areas in the state of Utah, or any other specific state. The findings of this study are intended to create a more in-depth baseline understanding of the current and future concerns and implementation of environmentally sustainable practices among the ski resort areas of Utah. These findings will serve to benefit the state of Utah's ski industry, tourism industry, and local communities through an increased understanding of the steps resort areas are taking to mitigate, promote, and plan effectively to offset the environmental impacts of ski resort areas. Results and recommendations from this study may also help other ski resort areas and communities concerned about the issue and looking for continued ways to protect their local economy and tourism industry.

Analysis Variables

Responses to the key informant instrument varied widely. In order to account for these differences and to better understand the data, five analysis categories were created that closely followed the interview instrument questions and served to group the informants into similar categories that were more easily decipherable. The five

categories were (a) informant background, (b) general environmental practices of ski resort area, (c) visitor perceptions of environmental practices at ski resort area, (d) environmental sustainability program involvement/experience, and (e) future plans in environmental sustainability. Each category was then further broken down into subcategories based on each specific question and for more extensive coding purposes. Subcategories will be explained in full detail later in the chapter.

As a result of each ski resort area tasking environmental practices to different employment positions, each informant's background information was collected including current position, length of time in position, length of residence in Utah, previous residence, and educational background. Collecting this information was valuable in order to understand what position each resort delegates environmental sustainability responsibilities, the informants background and experience with this issue, and their time in the Utah area. Time spent in the Utah area was helpful in making inferences to each informant's understanding of the inner-workings of the Utah ski resort industry, local community and businesses, and the tourism based economy.

Utah ski resort areas varied in which position they tasked with managing the environmental practices of resort areas. Table 1 details the position held by each informant for each resort area, their length of residence in Utah, and educational attainment. Examples of these positions include marketing and public relations managers, resort operations managers, and for specific resorts positions focused particularly on environmental sustainability being used.

Table 1

Key Informants' Position, Years of Utah Residence, and Education Level

Resort	Position	Years in Utah	Education
Alta	Sustainability Coordinator	4 yrs	B.S. Ecology
Beaver Mountain	Mountain Operations Manager	Entire Life	Some College
The Canyons	Resort Sustainability/Mountain Dispatch Manager	17 yrs	Bachelors of Science
Deer Valley	Executive Assistant to President and GM	20 yrs	B.S. Marketing
	Director of Marketing	33 yrs	Some College
	Resort Maintenance Manager	Entire Life	Some College
Eagle Point	CEO and Co-Owner	2 yrs	B.S. Economics
Park City	Director of Operations and Environmental Affairs	Entire Life	Some College
Snowbird	Energy Conservation Coordinator	16 yrs	Some College
	V.P. of Resort Operations	Entire Life	B.S. Journalism
	Budget Director	20 yrs	B.S. Accounting
Snowbasin	Public Relations and Marketing Manager	10 yrs	B.S. Marketing
Solitude	Director of Marketing and Public Relations	8 yrs	B.S. Marketing
Brighton	General Manager	Entire Life	Bachelors of Science
Sundance	Guest Services and Green Team Manager	30 yrs	Bachelors of Science

The sustainability specific positions at certain ski resort areas produced some key effects on the data collected. Originally, through the data collection process we hoped to obtain two to three key informant interviews from people in different positions at each resort area in order to gather various perceptions of how the ski resort area addresses the

task of environmental sustainability. With the ski resort areas that employed individuals in a sustainability position, the data collection was limited to that single key informant. This reduced the sample size and created possible limitations on the data set. However, the interviews with each key informant tasked specifically to manage the environmental practices of their ski resort area also produced highly information rich data. Since environmental sustainability was the specific focus for these key informants, the interviews proved to be beneficial to the data set. These informants were well versed in the issue and possessed a rounded understanding of the different approaches and tactics their ski resort was using in regards to environmental sustainability. Also, these informants offered an explanation of the current and future plans their resort area had in regards to this issue, in greater detail. Overall, 15 key informant interviews were completed. One resort area was not able to participate in the time span allotted, another was contacted numerous times with no response back, and the last resort was omitted from the study.

The second category was length of residence in Utah. This category was broken up into five-year increments for analysis purposes and to better document the years each informant had spent in the Utah area. The majority of informants grouped in the 16-20 year range, or the "entire life" range. It can thus be generally perceived that the majority of key informants have a well-rounded understanding of the role of ski resort areas in Utah's economy and tourism sectors. Table 2 shows a breakdown of the key informants years of residency in the state of Utah.

Table 2

Key Informants' Years of Residency in Utah

0-5 Years of Residency	2
6-10 Years of Residency	2
11-15 Years of Residency	
16-20 Years of Residency	4
21-25 Years of Residency	
26-30 Years of Residency	1
31-35 Years of Residency	1
35-40 Years of Residency	
41-45 Years of Residency	
46-50 Years of Residency	
"Entire Life" Residency	5

The third category was educational attainment. The majority obtained undergraduate Bachelors degrees with an emphasis on business including accounting, marketing, and economics. The key informants with this educational background tended to obtain employment at their ski resort area within their area of educational training.

Presentation of Results

The format for presenting the results from the study will first identify the question asked on the key informant instrument in chronological order, followed by a summary of the responses provided to the question asked. The questions chosen were those, which

address the study's stated objectives. There are four categories the questions fall into, which were previously mentioned in the analysis of variables section. They include: general environmental practices of ski resort area, visitor perceptions of environmental practices at ski resort area, environmental sustainability program involvement/experience, future plans in environmental sustainability. Questions from these four categories were chosen to help gain a better understanding of each key informants understanding of environmentally sustainable practices within the ski resort area they are employed by, and their areas future plans in regards to this issue.

The data compiled is qualitative and its value lies largely in the perceptions and understandings of the environmental sustainability issue expressed by each key informant. Due to its nature, the information collected was not meant to be collapsed into numbers, as some of the value in the data would have been lost. Instead, an exhaustive content analysis of the transcriptions was performed in order to break down responses to each question into further subcategories focusing on frequency of mentions. Therefore, when deemed necessary, findings will include a response profile in the form of various tables, which will be used to more easily reveal themes within each subcategory. This will assist in showing the similarities and differences that exist amongst the key informants and the ski resort areas of Utah. When used, these tables will be further explained within the text. Otherwise, questions will be explained openly, or through actual comments made by the key informants.

General Environmental Practices

Question 1: *Does your resort currently engage in environmentally sustainable practices, and if so what kind of practices?*

When the informants were asked *Does your resort currently engage in environmentally sustainable practices and if so what kind of practices*?, all respondents mentioned that their resort area engaged in these types of practices. Recycling was the most frequently mentioned response (66%; *n*=10) and also typically the first environmental practice key informants discussed. This included a variety of types of recycling stated. Examples include consumer waste, metal and building material, and oil and chemical recycling. The second most mentioned response centered on energy savings, carbon reduction, and energy credits (60%; *n* =9) specifically through the local energy company Rocky Mountain Power. This energy company offers a program titled The Blue Sky Program in which Utah ski resort areas, as well as other Utah based businesses and groups, invest in and support the development of renewable energy in the western region of the United States (Rocky Mountain Power, 2011). Their specific focus in the last few years has been wind and solar energy. Nine respondents (60%) mentioned a partnership or involvement with Rocky Mountain Power or more specifically their Blue Sky Program. These resort areas are involved with Rocky Mountain Power in a couple of ways. Resorts either over-pay their monthly energy bill and this surplus is put towards the development of sustainable energy in the western United States, or resorts receive credit or cash reimbursement on their energy bill based upon the sustainable energy improvements they undertake within their resort area.

The third most commonly mentioned sustainable practice was water quality improvement, cleanup, and use (40%; *n*=6). Attached to this notion, the larger ski resort areas in the state stressed their use of high efficiency snowmaking machines in order to better conserve energy and water use, and largely to expand their winter season by being able to open at an earlier date. It was also seen as a water storage technique. The following statement made by one of the key informants was a common response when explaining snowmaking and water use: "Snowmaking is probably the biggest user of water here. We like to see that as a recycling effort because what you make as snow comes back as groundwater. It also helps out in that we use it in the winter and it comes down later in the summer. We look at that as helping rather than hurting. There is some evaporation and all that, but we consider snowmaking as putting it right back in".

When looking at all of the responses to this question, these three practices were the most commonly mentioned in regards to environmental sustainability. However, other practices were also stated, just not at as consistently as the other three. Table 3 categorically details the responses the key informants to the general environmental practices of their ski resort area.

Table 3

General Environmental Practices of Utah Ski Resort Areas

Recycling	Energy Conservation	Water Quality/ Management	Transportation	Tree Planting/ Fuel Reduction	Digital/Paper Waste Reduction
66%; *n*=10	60%; *n*=9	40%; *n*=6	20%; *n*=3	26%; *n*=4	13%; *n*=2

Multiple responses allowed for each key informant

Additional categories include transportation, summer tree planting and forest fuel reduction, and a continued push to the use of digital devices in all departments in order to reduce paper use. Most notably, the key informants citing transportation as a sustainable practice came from the larger resorts in the Salt Lake City area. They participate in a partnership with the Utah Transit Authority in which a bus service to their resort area from the Salt Lake City area is offered for free to all season pass holders. This effort has been pursued to reduce carbon emissions and alleviate parking and traffic congestion within the canyons these ski resort areas are located.

Question 1a: *For how many years now do you feel your resort has engaged in these practices?*

Each key informant was asked this question regarding how long in years their resort had engaged in environmentally sustainable practices. Responses varied and some respondents expanded upon their resort areas environmental practices when asked this question. The following statement made by one of the key informants was an expansion upon the question:

> The big thing that we do here, and this is going to go back 20 plus years is we paid the bulk of the cost to have a new sewer system installed in this canyon which is 12 miles from here to the plant at the bottom. All these home owners up here in Silverfork canyon have the ability to connect to the sewer line and that has increased the water quality 10 to 100 fold because there are no septic tanks that would be leeching into the ground and those things are terrible for the environment. (Key informant, personal communication, Feb 20 2012)

Also, those key informants specifically employed in a sustainability position, tended to relate the years of these environmental practices to the inception of the position. Those key informants who fell in the twenty-three year plus category generally related the

environmentally sustainable practices of the resort area back to its inception. They deemed their resort area as always being environmentally conscious and continuously working toward improving in this area. Table 4 is a breakdown of the years of enacting environmentally sustainable practices by Utah ski area resort.

Question 1b: *Over this time span, do you feel your resort area has increased, decreased, or remained the same regarding the effort and attention put toward environmentally friendly resort practices?*

When each key informant was asked this question, nearly every respondent reported their resort was increasing the effort and attention they put towards continuing and enacting more environmentally sustainable practices (86%; n=13). Responses in this category varied from simply stating that efforts were "increasing" to expanding by adding that efforts were "steadily increasing" or "a slow progress and climb, but exponential in

Table 4

Years of Environmental Practices in 3-Year Increments

0-3 Years	2
4-6 Years	2
7-10 Years	5
11-14 Years	
15-17 Years	1
18-20 Years	1
21-23 Years	
23+ Years	4

the last few years." Those who expanded beyond just stating "increasing," mentioned that environmental efforts had largely increased due to a more cohesive understanding amongst all departments within their ski resort areas efforts in this issue. They felt education in environmentally sustainable practices had increased and more employees were "on the same page." Two responses were given that did not involve a specific increase in these practices. First, a key informant stated, "We have not been around long enough, this is only our second season, but I feel we will increase our concern toward these practices." The second key informant stated, "I think we have reached a plateau. It has increased in the past 10 years and we are continually looking for opportunities, but I think it has planed off a bit." Overall, the large majority (86%) of ski resort areas in the state of Utah feel they are increasing the effort and attention they put towards environmentally sustainable practices in some way.

Question 2: *Do you feel enacting environmentally sustainable practices at ski resort areas has become an issue of mounting concern?*

When key informants were asked whether enacting environmentally sustainable practices amongst ski resort areas has become an issue of mounting concern, the majority asked for additional clarification. This was offered by expanding the question into where environmentally sustainable practices fit into their resort's business model. Respondents were basically asked where these practices rank regarding level of concern within their daily operations. From this more detailed description, key informant's responses were categorized into high, medium, and low levels of concern. Included in these three categories is each key informant's classification, or perception, of where their resort area places concern on environmentally sustainable practices. This is detailed below.

Response Classifications to Level of Concern Placed on Resort Area Environmental Practices

<u>High Concern</u>

Key Informant- If it has a good return on investment, we are all for it.

Key Informant- Yes, it costs us more money but the end result is worth it.

Key Informant- The ski industry as a whole is starting to recognize it more.

Key Informant- Yes and we are working on making it more of a priority.

Key Informant- We place a lot on not only the company, but the environment as well.

Key Informant- It is one of our core values.

Key Informant- Yes, it one of the top five issues of our business model.

<u>Medium Concern</u>

Key Informant-Depends on the project. Some things are more important than others.

Key Informant- Somewhat, it continues to grow every year.

Key Informant- It has become an internal focus for us, but not so much with our guests.

Key Informant- Right in the middle. When we become more financially sound we will enact more sustainable practices.

Key Informant- It has become higher on our list since we are under the state now.

<u>Low Concern</u>

Key Informant-It is not a deciding factor on why guests visit our resort

Key Informant-I think people can feel strongly about it, but for most it is a minor factor.

Key Informant- It is not a big thing for our guests, so it is on the lower end of our scale.

Respondents trended toward viewing the environmental practices within their ski resort area as a high (46%; *n*=7) or medium (33%; *n*=5) concern. Reasons for considering these environmental practices of high to medium concern seemed to center around two key themes. First, key respondents highlighted these practices as an integral

part of their business plan, day-to-day operations, and future planning initiatives. The following comment is one made by a key informant during the actual interview. It is representative of the type of response that falls into the high or medium concern category with a focus on sustainability within the resort area business plan.

> It depends on how you define sustainability. We define it as a balance between our environment, economy, and social dynamic. When you look at that, we want to be here as long as possible and you realize that very much that has to do with sustainability. We are a fairly sustainable business, so it is offering a new management skill because things are changing in the market and no matter what thinking this way is a tool to really help out. (Key informant, personal communication, Dec 19, 2011)

Second, respondents mentioned environmentally sustainable ski resort area practices as integral to ensuring they remain economically viable into the future, and also felt a responsibility to do so as "environmental stewards." The following is a response by a key informant during an actual interview that would be representative of this category.

> I think it is because we are providing an outdoor or environmental experience, so to not be good stewards of that, or take care of it, or invest in the environment just seems kind of irresponsible. (Key informant, personal communication, Feb 7, 2012).

Those respondents in the low concern category highlighted a single central theme (20%; *n*=3). They related environmentally sustainable practices to the concern visitors to their resort area would place on the issue. Understandably, environmentally sustainable practices were low in their visitors eyes; these key informants placed a high importance on visitation numbers and in return a lower priority on resort area environmental practices as related to visitor perception. A response given by a key informant during an actual interview that falls into the low concern category follows.

> When we have surveyed visitors in the past, the response has been very low. I think some people feel strongly about it, but for most it is a minor factor. I think environmental issues are way down on their list of what is important. (Key informant, personal communication, Jan 5, 2012).

Responses to this question varied by perception. Key respondents all appeared environmentally aware and concerned about their resort areas sustainable practices, however they differed in what segment of the resort operations it related too. As mentioned before, respondents categorized environmentally sustainable practices as either part of their business model, the need to be environmentally friendly, or based it on visitor perception of the issue.

Question 3: *Do you see enacting and continuing environmentally sustainable practices as a high priority issue?*

When informants were asked if their resort saw enacting environmentally sustainable practices as a high priority, the large majority (86%; *n*=13) felt this question was similar to the previous involving level of concern placed on environmental practices and offered no response, or gave a similar response to the previous question mentioned. As a result, the responses from this question were included with the previous question that focused on the level of concern for environmental practices. This was based on the similar answers and minor differentiation between the two inquiries. No key informant approached this question from the viewpoint of visitors viewing enacting environmentally sustainable ski resort area practices as a high priority issue.

Question 4:*What do you see as the biggest limitation to adopting more environmentally sustainable practices at your resort area?*

When the key informants were asked what they saw as the biggest limitation to adopting more environmentally sustainable practices at their specific resort area, the most frequent response was "monetary limitations" (*n*=14), and usually the first limitation mentioned. Other responses ranged from lack of internal organization, lack of proper education on environmental practices for employees and visitors, and the lackluster state of the U.S. economy. Table 5 presents all the limitations mentioned by respondents.

Table 5

Key Informant Responses to Limitations of Adopting Environmentally Sustainable Ski Resort Area Practices

Limitation	**Number of Mentions**
Monetary/Financial Challenges	4
Internal Challenges/Lack of Education Amongst Employees	4
Lack of Staff Time to Focus on Issue	3
Current State of the U.S. Economy	3
Communicating to Local Community the Importance Economically	1
Lack of Municipal Community Support	1
Decisions Revolve Primarily Around Guests	1
Uncertainty of Environmental Certification Programs	1

Note: Key informants multiple responses caused them to be classified in more than one category for analysis purposes.

When informants discussed monetary limitations, the responses ranged from simply stating "monetary limits" to expanding upon why this was a specific challenge. The following comment is an example of a respondent expanding upon the monetary limits their resort area experiences when trying to enact more environmentally friendly practices taken from an interview.

> It is money. It's that simple. If the owners of a corporation do not have the passion or the foresight to see what may happen in the future and try to be sustainable to protect our environment and they do not set forth the funds to do it, then as a company you cannot do anything. (Key informant, personal communication, Jan 12, 2012).

Other responses for these monetary limitations ranged from budgetary constraints, money being tied up in more important daily operations such as lift maintenance or visitor safety, and lack of outside funding efforts.

The second most commonly mentioned limitation was internal challenges and a lack of education among resort area employees in regards to environmentally sustainable

practices (*n*=4). The following comment is an example of a key informant indicating a lack of communication internally within their resort area.

> There are a lot of people in charge around here and nobody is on the same page, so trying to get everyone together to do the same thing is virtually impossible. The general things definitely happen, but a lot of the little things where I want people to do this or that….it happens in some places….but not others. (Key informant, personal communication, Dec 7, 2011).

The third most commonly mentioned limitation was lack of staff time to focus on the issue, and the current state of the U.S. economy (*n*=3). Respondents highlighting this limitation had comments such as: "I think the economy has trumped the environmental card for awhile in our situation. Cost derivatives are big for us." These respondents felt their ski resort had felt the economic downturn just like other U.S. businesses. Thus, they had less money to put towards increasing the environmental practice of the resort and less money to create a position or area to specifically take on the task of improving resort environmental practices.

Of the eight limitations mentioned, five were mentioned only once. These responses seemed to be either largely based on the opinion or perception of the informant and stated as an afterthought, or based on the location of the ski resort area and their relation with the local community.

Question 4a: *In what ways could these limitations be reduced?*

Attached to the question of limitations, informants were asked how these limitations could be reduced. The majority of respondents (*n*=6) had no response to how to reduce these limitations, or stated they did not know how. Followed by that response, informants stated that environmentally sustainable technology and products are advancing and thus becoming more affordable (*n*=2). As a result their resort area plans to

continue adopting these products and practices as prices drop and technology improves. The remaining responses (*n*=6) were varied and consisted of singular specific statements by key informants on how these limitations could be reduced. Statements included an increase in data and information sharing amongst ski resort areas across the U.S. in regards to their environmental practice implementation. This would help in determining which practices have been most effective and thus could be adopted by other resort areas. Other approaches included adopting a more interdisciplinary approach with local community members and groups in order to bring in more monetary assets to put towards resort environmental practices, and a general cultural shift of resort area employees and visitors with a push towards getting them to be more environmentally conscious. Respondents cited limitations to adopting more environmentally sustainable practices at their resort area easily and in many cases provided specific example. However, when asked how to reduce these limitations, key informants were more often able to state the limitations, but no specific way for them to be reduced.

Visitor Perceptions of Environmental Practices

Question 5: *In your opinion, are ski resort areas key tourist attractions in the state of Utah?*

This was the first question given to respondents in the visitor perception category of the interview. It was asked to gauge if key informants felt ski resort areas in the state of Utah were not only key tourist attractions, but also to see if respondents from ski resort areas further from Utah's tourist epicenter of Salt Lake City would expand their response, or offer a different perception. All respondents (100%; *n*=15) offered a response of "yes"

and did not expand upon the question. Even among those informants employed by ski resort areas distant from the Salt Lake City area, all felt ski resort areas were key tourist attractions in the state of Utah.

Question 5a: *In your opinion, what is the role of the ski resort areas in the state of Utah's economy?*

This question was included second to further expand upon the first question asked regarding the tourism value of ski resort areas in the state of Utah. In the state of Utah, the most current report cites that winter tourism to ski resort areas and local businesses generated an estimated $1.17 billion in spending for the state (Green-Miner, 2011). It was asked in an effort to assess where key informants placed the value of ski resorts to the state of Utah's economy, as well as to see if they would suggest resort areas effects on increasing local business and community economic revenues. All the key informants (100%; *n*=15) responded that the ski resort areas of Utah are important to the state's economy. Responses were not heavily expanded upon, but included comments such as "number one or number two on the list," "right behind the state parks," or "a viable part of the Utah economy." The following is a comment from a key informant expressing a more detailed response to the question.

> Utah receives a fairly low impact, high spend wintertime visitor. They come in and they spend money until they leave, and they do not really use the roads or schools that much. Overall it is high return. (Key informant, personal communication, Jan 5, 2012)

Overall when asked this question, all respondents possessed common knowledge of the importance of Utah ski resort areas to the state economy.

Question 6: *Are you familiar with the concept of eco-tourism?*

This question was asked to key informants in order to ensure they were familiar

with the concept of eco-tourism, since the questions to follow consisted of their experiences and perceptions of more environmentally conscious visitors to their ski resort areas. All respondents (100%; *n*=15) had heard of and understood the concept. No informant expanded upon the question, all simply stated they were familiar with this concept.

Question 6: *Do you feel you are receiving an increase in visitors that are more environmentally aware that you would categorize as "eco-tourists"?*

When key informants were asked this question, it was often needed to be expanded upon to include visitors who were not necessarily "eco-tourists," but rather that they were receiving visitors they would classify as more "environmentally aware." More emphasis was placed on the environmentally aware section of the question. The majority of informants (64%; *n*=9) based on responses fell into the "No" category and cited they were not receiving visitors they would classify as more environmentally aware (Table 6). However, two key themes emerged within this category. First, no respondent emphatically stated "No," rather most informants stated they were not "currently receiving more environmentally aware visitors", or they were "not in a state yet to effectively market ourselves that way." Other remarks included, "I do not have the information to substantiate that claim" and "No, but I think society overall is becoming more environmentally aware." While the informants in this category did not feel they were receiving an increase in visitors they would categorize as more environmentally aware, they were optimistic this trend could change. Second, when looking at this category with a location variable attached, the majority of respondents (60%; *n*=6) were from ski resort areas in Utah distant from urban Salt Lake City. These resort areas may

Table 6

All Key Informants Responses to: Is Your Resort Area Receiving an Increase in Visitors That are More Environmentally Aware That You Would Categorize as "Eco-Tourists"?

YES, Receiving More Environmentally Concerned Visitors	33%; n=5
NO, Not Receiving More Environmentally Concerned Visitors	67%; n=10

be receiving lower visitation numbers based on their further proximity from the urban area of Salt Lake City and its international airport, thus making it harder for them to gauge how environmentally aware their visitors are. Also, they may be receiving a large number of visitors they would classify as "local" rather than "tourist" visitors.

The remaining respondents (33%; *n*=5) stated "Yes," they felt their ski resort area was receiving an increase in visitors they would deem more environmentally aware or concerned. Comments from informants in this category include: "Absolutely, our guests are much more environmentally aware than they used to be", or "Definitely, especially our international visitors." When attaching the location variable to this category, it was revealed that all respondents (100 %; *n*=5) in this category were from the larger resort areas in close proximity to the Salt Lake City area. These resorts receive higher yearly visitation numbers, and a larger influx of patrons they would classify as tourists, including international visitors. Based on the closer proximity to Salt Lake City and its airport, these resorts most likely receive more environmentally aware patrons based largely on their higher visitation numbers, and possibly due to other contributing factors.

Question 6b: *Do you think they are choosing your resort area over others based on your environmental practices?*

When key informants were asked whether they thought visitors were choosing their ski resort area over others based on their environmental practices, the high majority (86%; n=13) responded that they either "did not know," stated that determining that was "hard to judge," or simply responded "no." When this group expanded their responses given, they cited other reasons for patrons choosing to specifically visit their area. Reasons included snow conditions and type of terrain, convenience and location, cost, amenities offered such as ski schools and childcare facilities, or the social variable of having family or friends whom attend the same resort area. Another statement of interest was that four of the informants mentioned they did not know the answer to the question due to the fact that data on this subject among their visitors did not exist. Although this number is somewhat low (26%; *n*=4), it points to a gap in information on the issue that would be fulfilled through completion of Phase 2 of this project.

The other two respondents stated they felt their resort area was being chosen over others based on their environmental practices. One simply stated it was a "growing factor" among their visitors. The other informant offered a more extensive response, highlighting why they are chosen over other resorts in Utah:

> Yes, I think one of the big draws, especially to our resort is that we have a minimal impact on the environment here. When you come up here you almost cannot even find us because we are hidden behind trees, it is un-spoiled, there is not a lot of development here and it has not changed a lot over the years. So if you were returning after say 15 years, it would still look relatively the same. I think our clientele are very outdoors and environmentally aware, and they will ask about what we are doing or where to recycle. Our clientele is just savvy environmentally that way. (Key informant, personal communication, Feb 28, 2012).

Of note with these two informants, the first is classified as an "entire life" resident of Utah and the second falls in the 30 plus year category. Also, their resort areas have employed both informants for over 10 years. These respondents may possess a complex understanding of the clientele visiting their area, how these demographics have changed over the years, and a more solid grasp of the Utah winter tourism industry as a whole.

Question 7: *How much importance do you think resort visitors place on the environmentally sustainable practices of ski resort areas in the U.S.?*

Informants were asked this question as an extension of the previous one and it was used to gauge how much importance respondents felt resort visitors placed on the environmentally sustainable practices of ski resort areas in the United States, not just the state of Utah. All the key informants (100%; *n*=15) stated that this was not something of high importance to visitors of U.S. ski resort areas as their primary response. A few informants (40%; *n*=6) included the notion that " only a small minority are concerned" or "overall it is not a deciding factor." There were no indications from any of the respondents that they perceived visitors to U.S. ski resort areas placing an average or high importance on the environmental practices of these areas.

Question 8: *Have you made conscious efforts to market or promote the unique or distinctive environmental practices your ski resort area undertakes in respect to tourism?*

When key informants were asked about the efforts they are aware of that their resort area undertakes in respect to marketing their unique or distinctive environmental practices, (60%; *n*=9) of respondents stated "Yes" their resort area specifically marketed in this way; while (40%; *n*=6) stated "no" their resort did not market their unique environmental practices whatsoever (Table 7).

Table 7

All Key Informants Responses to: Has Your Resort Area Made Conscious Efforts to Market or Promote Its Unique or Distinctive Environmental Practices It Undertakes in Respect to Tourism?

YES, Have Made Efforts to Market our Environmental Practices	60%; n=9
NO, Have Not Made Efforts to Market our Environmental Practices	40%; n=6

Question 8a: *If so, what forms of marketing and promotion have you been using?*

When the key informants were asked what forms of marketing or promotion they were using to promote the distinct environmental practices within their ski resort area, there were nine different forms mentioned. These forms are shown in Table 8. Four resort areas stated they were not marketing or promoting the environmental practices at all. Of note here is that three of these four resorts were located outside of the Salt Lake City and Park City areas. The most frequent form used was via "website" with eleven respondents stating their resort undertook this type of promotion. The second most mentioned response, with four mentions, was the use of magazine publications or advertisements. This was further clarified by citing that they were in publications that were distributed on a national level. The third most commonly mentioned forms were resort signage, internal marketing, and social networking. Resort signage involved strategically placing signs throughout resort areas that either served to educate visitors on the environmental aspects of specific sections of the mountain, or were used to promote the sustainable environmental practices of the resort.

Table 8

All Key Informants Mentions of the Forms of Marketing or Promotion Used to Highlight Their Resorts Environmental Practices

Forms Mentioned	**Number of Mentions**
Website	11
Magazine Publications	4
Resort Signage	3
Internal Marketing	3
Social Networking	3
Brochures	2
Education and Outreach	1
Press Releases	1
Publish through Ski Area Citizens Coalition	1

Note: Multiple responses allowed for each informant

restaurants and other guest areas of these resorts. The remaining forms were mentioned only once and each seemed to be unique to the specific resort area. Ski resort areas in Utah overall have focused their environmental practice marketing efforts toward including an environmental section within their company website.

Question 8c: *Do you feel these efforts have been effective?*

Key informants were asked this question as an addition to the previous one in order to gauge a better understanding of which marketing efforts were effective or not, in regards to each resort area's promotion of environmental practices. The four resort areas not participating in environmental marketing efforts were not asked this question. Of the key informants amongst the eleven resort areas marketing environmentally; seven of them (63%; *n*=7) felt their marketing efforts had been effective, one felt their efforts had been "somewhat" effective, and three (27%; *n*=3) stated they had not been effective. Those resorts stating efforts had been effective expanded with comments such as: "It is making people more environmentally aware. It is not drawing more visitors, just making

them more aware" or "Yes, because we are getting both positive and negative feedback from guests on what we are doing." Respondents in this category further stressed that marketing their environmental efforts was not increasing visitation numbers. Instead it was serving to make patrons aware of the specific environmental practices of the resort, area and helping to create more environmentally aware members of society in general.

Informants from resort areas who felt their marketing efforts had not been effective indicated the clientele they received was already environmentally conscious, or that the word-of-mouth and grassroots forms of marketing were working better. An example of a response from this category is an excerpt taken from an interview:

> I would not say that it is part of our specific marketing plan, though we do inadvertently get that message out just because we tout the unspoiled nature of our resort area and our visitors seem to spread that message. (Key informant, personal communication, Feb 28, 2012).

The majority of respondents felt continuing forward with these efforts may not directly increase visitation numbers, but may serve to better educate the general public and make them more environmentally aware.

Question 9: *Do you see potential to grow the eco-tourism niche of the tourism market within the ski resort industry of Utah?*

When key informants were asked: *Do you see potential to grow the eco-tourism niche of the tourism market within the ski resort industry of Utah?* Two thirds (*n*=10) stated there was potential to grow this niche of the tourism market in Utah, while (*n*=5) stated there was not potential (Table 9).

Table 9

All Key Informants Responses to: Do You See Potential to Grow the Eco-Tourism Niche of the Tourism Market Within the Ski Resort Industry of Utah?

Yes, The Eco-Tourism Niche has Potential to Grow	66%; *n*=10
No, The Eco-Tourism Niche Does Not have Potential to Grow	34%; *n*=5

When looking at responses to this question with the inclusion of a location variable, the larger resorts with higher tourist visitation numbers were not overly represented in the "Yes" category. Larger resorts in close proximity to the Salt Lake City or Park City area (50%; *n*=5) were equal in the "Yes" category to smaller resorts further removed from the area (50%; *n*=5). In the "No" category (100%; *n*=5) of the respondents were from large ski resort areas close to the Salt Lake City or Park City area that receive high tourist visitation. The responses to this question do not follow the trend that emerged from the previous marketing questions, which revealed that the majority of resorts undertaking environmental marketing efforts, were the larger ones in Utah with high tourist visitation numbers. Rather, an equal amount of smaller resorts were represented in the "Yes" category to larger resorts and felt the potential was there to grow to eco-tourism market within the ski industry of Utah.

The ten respondents in the "Yes" category were asked to expand.

Question 9a: *How would you Grow the Eco-Tourism Niche **o**f the Tourism Market Within the Ski Resort Industry of Utah?*

Below are detailed responses each key informant gave in regards to growing this niche of the tourism market.

Key Informant- Show guests that by spending money with us they are investing in the environment as well.

Key Informant- Convincing guests to pay a bit more for us to be "eco-friendly."

Key Informant- Education of staff and guests, building more awareness.

Key Informant- Market more in environmental avenues.

Key Informant- Target publications that are part of the environmental demographic.

Key Informant- When the economy rebounds it will be back at the forefront of people's minds.

Key Informant- By emphasizing the primitive nature of our resort area.

Key Informant- Market in-line with peoples environmental philosophies.

Key Informant- Once we have something to market, we will work towards appealing to this group.

Key Informant- As the industry gets better and we increase our practices, then we will have more pieces to market to that group.

Informants varied in how they would approach growing the eco-tourism market in the ski industry of Utah and offered responses largely based on personal perception, or based on the unique situation of their resort area. Two similar themes did emerge in the statements given. First, three of the informant's responses could be categorized under the same idea that involves marketing in more environmentally specific areas. Examples given by informants included advertising and promoting in environmental publications, hosting more events with an environmental theme, and researching the resources the

environmental crowd follows and marketing more effectively with those prospects. Second, two of the key informants responses were similar by stating they did not have any specific environmentally sustainable practices to market yet, but would do so in the correct avenues when these practices are put into place. Even though these resort areas did not have anything explicit to market to the environmental crowd, they see future potential in this niche of the Utah tourism industry. The remaining five statements of the key informants were unique to each resort area or individual and could not be categorized in any one way.

Environmental Sustainability Program Involvement and Experience

Question 10: *Has your ski resort area ever participated in any sustainability/ environmental charter programs?*

Each key informant was asked whether their ski resort area had participated in any environmental sustainability programs and further to identify the specific programs they had worked with. Table 10 is a list of programs mentioned. Some resort areas participated in a singular program, while others were part of multiple programs. Two informants from separate resort areas stated their area did not participate in any environmental programs. Eight separate programs or foundations were mentioned. The two most commonly were the Sustainable Slopes Program (60%; *n*=9) through the National Ski Area Association (NSAA) and the Blue Sky Program (46%; *n*=7) through Rocky Mountain Power (RMP). Information on both of these programs was cited earlier in the literature review and they receive larger participation rates since they are on a national scale.

Table 10

Environmental Programs Participated in by Utah Ski Resort Areas

Program	**Number of Responses**
Sustainable Slopes Program (NSAA)	60%; *n*=9
Blue Sky Program (Rocky Mountain Power)	46%; *n*=7
Cottonwood Canyons Foundation	26%; *n*=4
Summit Land Conservancy	26%; *n*=4
Climate Challenge Program (NSAA)	20%; *n*=3
Save Our Snow Program	13%; *n*=2
National Forest Foundation	6%; *n*=1
Ski Area Citizens Coalition	6%; *n*=1

The third most mentioned consisted of the Cottonwood Canyons Foundation (26%; *n*=4) and Summit Land Conservancy (26%; *n*=4), both programs specific to the Utah area. The Cottonwood Canyons Foundation is an environmental stewardship and education foundation that works to continuously improve the environment of the Big and Little Cottonwood Canyons. This is done through partnering with local citizens, businesses, and the four ski resort areas located up these canyons, to conduct educational programs and environmental improvement projects year round (Cottonwood Canyons Foundation, 2011). Summit Land Conservancy is based out of Park City. This organization holds conservation easements on over 2,000 acres and is working to secure another 1,700 acres. The ski resort areas of Park City support this program through donating 1% from nightly lodging paid by their guests to this program to secure open space protection (Summit Land Conservancy, 2012).

Three respondents (20%; *n*=3) stated their resort area was participating in the Climate Challenge Program (NSAA). This is a new program unveiled this year through the National Ski Area Association as an extension of the Sustainable Slopes Program.

Unlike Sustainable Slopes, which is a voluntary reporting program, this challenge goes a few steps further and requires resort areas to inventory, target, create and achieve new goals, and report the findings in the areas of carbon reduction and environmental practices (National Ski Areas Association, 2012).

The remaining three programs were cited twice, or once. Respondents did not expand upon these programs, or stated them as an afterthought.

Question 10a: *How would you classify your experience with these programs (Positive, Neutral, Negative)?*

In order to expand upon the previous question regarding environmental program participation, key informants were asked to classify their experience with these programs. The thirteen informants whose resort areas are part of these types of programs were categorized in either a positive, neutral, or negative category. Included in this categorization are general responses that serve to clarify how the key informants fit in their particular categories (Table 11). Ten of the key informants (77%; *n*=10) were in the positive category; three informants (23%; *n*=3) in the neutral category, and no informants classified their experience as negative. In the positive category, two key themes emerged. First, responses centered upon the educational, rather than marketing value of these programs (40%; *n*=4). Respondents found programs of this nature valuable when looking at what other ski resort areas were doing in terms of environmental practices, or what new initiatives were being created. The following comment is one made by a key informant during an actual interview. It is representative of the type of response that clarifies this theme:

> Sustainable Slopes has been good as the guide we use to see what other ski areas in the country have been doing as far as environmental practices and

Table 11
Response Classifications to Key Informant Experience with Environmental Programs

Positive
Key Informant- They are great, but the local programs I feel are better than the national.
Key Informant- Very good, the local programs have been more effective though.
Key Informant- Great, both helpful and informative.
Key Informant- Great, especially the local community stuff.
Key Informant- Part of being an environmental steward.
Key Informant-Helps us save money and be environmentally correct.
Key Informant- A good information experience.
Key Informant- Helps us see what others are doing.
Key Informant- Good educational tool.
Key Informant- They all have been great to work with.
Neutral
Key Informant- Not enough people taking advantage of it because of the money.
Key Informant- Kind of hard to implement and my feelings on it are mixed.
Key Informant- Mixed, we are careful about jumping on any one of those bandwagons.
Negative
None

> seeing if we can adopt those and make them work for us. I see SSP as more of an educational thing than anything else. (Key Informant, personal communication, Feb 24, 2012)

The second theme revealed was that informants found more value in the local, rather than national environmental programs (30%; *n*=3). To these respondents, working with smaller organizations located in the Utah area, was felt to be a bit more beneficial. The following comment is one made by a key informant during an actual interview. It is representative of the type of response that clarifies this theme:

> With the local ones I have mentioned we get on the ground floor and it has been effective. NSAA is over the Sustainable Slopes Program and that is a national organization for all of the ski areas. I think we focus on things as close to our resort area as possible. So programs like the Cottonwood Canyons Foundation have been great for us. (Key Informant, personal communication, Jan 5, 2012).

The three informants in the neutral category gave varying response to their experience with any environmental programs. The following comment is the most detailed statement in the neutral category and references how beneficial the program is compared to money spent, and the Climate Challenge program is also mentioned:

> My experience is basically neutral. I do not think enough people are taking advantage of really getting into the meat of the program, because of money. I think the education part of it is great, but that is about all I can say about that. It is the same with the one being started at NSAA right now (Climate Challenge) and it is again you learn all the things you can do and give people the tools to calculate their carbon footprint, but it still costs money and that is the bottom line. (Key Informant, personal communication, Jan 12, 2012).

Informants seemed to personify environmental programs as generally positive and valuable. Utah based local programs were considered more helpful based on their on the ground efforts and closer communication levels. National programs such as Sustainable Slopes were viewed largely as beneficial in the educational value and opportunity they provided, more so than the marketing aspect.

Question 11: *Do you feel these programs are useful or effective?*

When the thirteen key informants whose resort areas participate in environmental programs were asked if they overall *felt these programs were useful or effective?*, all respondents (100%; *n*=13) stated they felt these programs were useful or effective. Primary responses building upon the question included the programs' value as an "educational tool" or "beneficial not only to ski resorts and employees, but also in helping society become more environmentally conscious." No mention was made of local environmental programs being more useful or effective than national programs. All respondents felt ski resort area environmental programs had value and purpose.

Question 11b: *Do you see these programs as important for the future planning of environmentally sustainable practices in the ski resort areas of Utah?*

All 15 key informants were asked this question. This was done considering the two resorts not currently participating in any environmental programs may do so in the future, or possess views on the importance of these programs in planning efforts. Each informant (100%; *n*=15) felt environmental programs were important in the planning efforts of environmentally sustainable practices for the ski resort areas of Utah. Responses to this question stressed the value of local programs more than national programs (53%; *n*=8), however national programs were not discounted as having little merit in future planning efforts. The following is a comment made by an informant during an interview that represents this perception:

> Yes, I keep thinking of the community, but I think getting ideas from other resorts around the nation would be great. Locally we are working with the watersheds, and Summit Land Conservancy and Recycle Utah and they are doing so much teaching us about sustainability in general. Our three resorts work together locally and it really helps**.** (Key Informant, personal communication, Jan 17, 2012).

All respondents found value in these environmental programs for planning efforts in the ski resort areas of Utah. This included a combination of programs on both the local and national level. Once again, respondents stressed the value of local programs due to the closer level of communication and community involvement. The two respondents from the resort areas currently not participating in any environmental programs did mention they are continually researching programs to undertake and hope to do so sometime in the future.

Question 11c: *Can you expand on the environmentally sustainable practices of your resort area in any of the following areas?*

This question was asked of key informants in order to gain a more accurate and in-depth understanding of what environmentally sustainable practices their resort area was undertaking in specific areas. Respondents were asked to expand with a more detailed response in six different categories. The categories are listed here:

- Water use in snowmaking, facilities, wastewater, and quality management
- Energy use for facilities. (lifts, vehicles, lodging, etc)
- Recycling, re-use of products
- Future planning in design and construction
- Forest and Wildlife management
- Education and Outreach

These areas were selected from a more exhaustive list of categories provided through the Sustainable Slopes Program of the National Ski Area Association (NSAA, 2010). This question was included in this section of the key informant instrument based on the idea that these categories cover a broad spectrum of the categories that would be addressed in a variety of ski resort area environmental sustainability programs. In this analysis, each category will be stated, followed by the explanation of the data collected.

Water Use in Snowmaking, Facilities, Wastewater, and Quality Management

When key informants were asked to provide a more detailed explanation of what their resort area was doing in this category, two respondents from separate resort areas stated their resort did not participate in any specific environmentally sustainable practices in this area. Of the remaining thirteen respondents, the most frequently mentioned response was "high-efficiency snowmaking" (92%; *n*=12), and this was also generally the first thing discussed by informants (77%; *n*=10). Snowmaking came up as the first topic in this category, largely due to respondents stating it accounted for the highest

amount of water use at their resort area. This was clarified through statements like, "Snowmaking is by far the biggest use of water here," and "Especially this year, that is where all of our water has been going." When all the respondents who mentioned snowmaking (92%; *n*=12) further explained snowmaking at their resort area, two key themes were revealed. First, key informants stated their ski resort areas were consistently updating to more highly efficient snowmaking equipment and ways to use water (75%; *n*=9). Advancements in snowmaking technology have allowed resorts in Utah to cover larger expanses of land, use less water in the process, and do so at a lower cost to them overall. This theme is represented through the following comment stated here by a key informant during an interview.

> We use a combination of low energy snow guns that are highly energy efficient. That is working really well for us, our new snowmaking additions are more energy efficient. They are gravity fed so we can make snow without even turning a pump on for many parts of our mountain and it works out very well for us. (Key Informant, personal communication, Feb 28, 2012).

One respondent stated their resort area was being used as a research and development site for a snowmaking equipment company. Every other year they are retrofitted with new more technologically advanced snowmaking equipment and asked to provide feedback on its operations and efficiency to the company.

The second theme common among respondents was the perception of snowmaking as an environmentally sustainable practice due to its water storing properties (58%; *n*=7). These respondents felt snowmaking was increasing water storage in the canyons they are located in and thus increasing the water runoff being used by valley

communities in the spring and summer months. This theme is represented through the following comment stated here by a key informant during an interview.

> So snowmaking and water use, all you can do is decide how much snow is enough to put in any particular area and with that being said the decision has to be made of how much snowmaking needs to be down. The second thing is what is happening to the water? I believe we are storing it, I do not believe we are losing the water. There will be some percentage that evaporates, but I believe it is being stored. All of our water we own water rights to and it is water that flows out of the mountain and down through the streams and into the reservoirs. We use that water in the winter, our annual water right for snowmaking the amount we use even on a big year like this year, we use a very small percentage of what our annual water right is. So that water is allowed to go on down into the valley for other uses. (Key Informant, personal communication, Jan 12, 2012)

Other environmentally sustainable water use practices were mentioned such as "high efficiency water fixtures and toilets, including waterless urinals and the use of "surface" rather than "well" water which reduces the energy needed for pumping efforts. One resort area was the main funding source on the installation of a highly efficient sewer system installed in 1992 in the canyon in which they operate. Since its installation, even with increased development in the area and a higher population, water quality has improved even with more strain in the area. All efforts in this category are detailed in Table 12.

Snowmaking received a high number of mentions and explanations possibly due to its direct effect on mountain operations and skier visitation. Snowmaking allows resort areas to expand the length of their operating season and can determine how well they survive financially in a low snow year. Thus, snowmaking may have received this high level of attention due it being at the forefront of water use for the majority of Utah ski resort areas, and a having a direct effect on revenue earned since it may determine the number of days a year the resort is operating during the winter months.

Table 12

Ski Resort Environmental Practices in the Area of Water Use

Practice	Number of Respondents
High Efficiency Snowmaking	92%; *n*=12
High Efficiency Fixtures/Waterless	25%; *n*=3
Water Use Avoiding Use of Pumps	16%; *n*=2
Efficient Sewer System	8%; *n*=1

Note: Multiple responses were allowed for each informant

Energy Use for Facilities (Lifts, Vehicles, Lodging, etc.)

The environmental practices in the field of energy use mentioned by the key informants are stated here in Table 13.

When this category was presented to the key informants, all 15 (100%; *n*=15) remarked that their resort area participated in some sort of environmentally sustainable practice that saved energy. The practice mentioned the most involved upgrading the resort area to high efficiency lighting fixtures (73%; *n*=11). This included lodging, maintenance shops, lift facilities, and the majority of buildings within the resort areas. Informants expanded on this area by commenting on the technological advancements and price reductions in lighting that had made it more efficient and affordable, as well as the relative ease of installing and implementing new light fixtures. The following is a comment from an interview that reflects this viewpoint.

Table 13

Ski Resort Environmental Practices in the Area of Energy Use

Practice	Number of Responses
Efficient Lighting	73%; *n*=11
Retrofitting Heating Fixtures	46%; *n*=7
Bio-fuel	40%; *n*=6
Wind Power Offset	26%; *n*=4
Oil Reuse	20%; *n*=3
No Idling Policy	20%; *n*=3
Geothermal Heating	13%; *n*=2
Hybrid Vehicle Use	6%; *n*=1

Note: Multiple responses allowed for each key informant

> For electricity we have upgraded all of our lighting to T-8 lighting and that has saved us about 91,000 plus kilowatt-hours annually, we did that two summers ago. A lot of it is behavioral, installed a lot of automated systems and other lighting automation or sensor awareness. We have also expanded education around that, letting employees know to turn off their monitors etc. (Key informant, personal communication, Dec 19, 2011)

The second most mentioned environmental practice in the field of energy savings involved retrofitting heating timers on lodging and lift facilities in order to regulate heat use and reduce energy consumption (46%; *n*=7). Informants were asked to expand upon this into the energy saving practices their area was undertaking in regards to lift operations. All respondents (*n*=7) stated in various ways the difficulties of being energy efficient with lift operations. As a result, retrofitting heating timers on lift facilities was mentioned as the main form of cutting down on energy consumption in the area of lift operations. The following is a comment from an interview that is typical of those indicating the challenge of lift energy efficiency.

> Energy efficiency on lifts is a whole other story. They are great big motors and there is not an awful lot you can do. But there is in the lift houses and lift shacks and terminals. Those have efficient lighting, timers on heaters, whatever is available that we can take out of the hands of the operators and use something mechanical to reduce that use. But we also educate the operators to keep the lights off, the heat off etc. (Key informant, personal communication Jan 12, 2012).

The third most mentioned environmental practice in the area of energy use was the use of B-20 bio-fuels in vehicles and for heating purposes (40%; *n*=6). However, in this area respondents expressed mixed feelings about the use of bio-fuels. Two of the respondents (33%; *n*=2) from separate resort areas stated their area had used bio-fuels in the past, but presently had discontinued use. This was due to bio-fuels being "significantly more expensive than gas" and "a hassle to deal with." These informants stated if the price of bio-fuels were to drop, they would consider implementing the use of this type of fuel again in the future. The other informants (67%; *n*=4) found the use of bio-fuels to be a positive experience for their resort area. The following is a comment by a key informant detailing the energy benefits of bio-fuel use for their resort area.

> One hundred percent of our diesel that we use for grooming and everything else, 100% is B-20 bio-fuel. So that has been a reduction of about 1500 tons in the last five or six years from the use of B-20. (Key Informant, personal communication, Jan 12, 2012).

Attached to this notion, a few respondents also stated the reuse of used oils for heating purposes in buildings, most specifically maintenance shops (50%; *n*=3).

The fourth most mentioned environmental practice in the area of energy use was the purchase of wind power as an energy offset for each resort area (26%; *n*=4). Three of the respondents reverted back to mentioning the use of the Blue Sky Program through Rocky Mountain Power to achieve this goal (75%; *n*=3); the other respondents resort area

enlisted the use of Renewable Choice Energy. Similar to Rocky Mountain Power, Renewable Choice Energy is based out of Colorado and offers largely the same service. The resort area involved in Renewable Choice Energy purchased Renewable Energy Credits (RECs). Renewable Choice Energy states the purchase of these credits "reduces the environmental impact of your electricity use, helps reduce U.S. dependence on fossil fuel, and supports wind power developers striving to succeed in a highly competitive non-renewable fuel-based energy market" (Renewable Choice Energy, 2012). These, resorts are not specifically implementing the use of wind energy at their areas, rather they are investing in the continued construction of wind power in other areas largely as a form of supporting environmental initiatives.

The remaining environmentally sustainable energy use practices stated were mentioned three times or less. These include a "no idling" policy for all vehicles at the resort area (20%; *n*=3), geothermal heating for various areas of the resort (13%; *n*=2) and "hybrid vehicle use" (6%; *n*=1).

Recycling, Re-Use of Products

Key informant responses to the recycling efforts of their resort area were largely covered in the first question asked about the general environmental practices of their resort area. This is considering it was the most often stated environmentally sustainable effort enacted by the majority of Utah ski resort areas (66%; *n*=10, from Table 1). This category was included in order to allow key informants the ability to expand upon the specific recycling practices of their resort area and provide more in-depth information if they chose to do so. Two out of the fifteen key informants from separate resort areas

stated their resort area did not participate in any form of recycling (13%; *n*=2). These informants were from two of the smaller resort areas and distant from the population dense areas of the Wasatch Front. Each of the two informants gave reasoning for not undertaking recycling efforts. The first informant's resort area is located in a county void of a recycling program. Hence, the combination of the manpower and costs put forth in any recycling effort, outweigh the gains. The second informant's resort area is tasked with the hauling and removal of all waste from their resort area. As a result, once again manpower and cost limitations make it difficult for this resort to undertake recycling efforts.

The other thirteen respondents all provided a more in-depth explanation of the recycling efforts undertaken by their resort area. All the ski resort areas, which employ the thirteen respondents, participate in "general" recycling practices (100%; *n*=13). These general practices including the recycling of plastics, aluminum, cardboard, paper, and other similar products. This has largely been achieved in the food and beverage departments and on-mountain through offering separate recycling bins intermixed within the resort area for visitors and employees to recycle these products. Other efforts include resort signage and promotion of where items can be recycled within these resort areas.

The second most employed recycling practices were in the categories of "fluids" recycling (46%; *n*=6) and "materials" recycling (46%; *n*=6). Fluids include the recycling or reuse of various fluids in different mountain operations such as anti-freeze, oil, paint, and chemicals. Materials recycling involved either the recycling or reuse of general materials or parts off of lifts or vehicles. This included steel, wood, aluminum, tires, copper, and various wires. Respondents in both of these categories stressed the continued

importance their resort area had placed on these two forms of recycling/reuse and their continued expansion into these areas. Statements included, "What we focus on largely is not only recycling, but reuse of products," and "our maintenance shop is an amazing recycling effort that relates to machinery, chemicals, and oils and things that they use."

The remaining recycling efforts were in two other forms and both undertaken by one resort area with a single key informant (7%; *n*=1). These included being a member of Terracycle.net. This program has created a national recycling program for previously non-recyclable or hard-to-recycle waste. Items in this category include candy wrappers, cell-phones, chip bags, and others (Terracycle, 2012). The resort area has set up a collection system through this program to be able to handle these items generally deemed non-recyclable. The other recycling form practiced by the same resort area involves the recycling of used ski gear through Snow Sports Industries of American (SIA). The resort area collects used equipment and it is sent to a processing facility to be repurposed into other products (Snow Sports Industries of America, 2011). In the category of recycling, Utah resorts overall undertake general recycling practices and are continually expanding into the other areas of recycling and reuse of products regarding fluid and material use. Table 14 states all the recycling efforts.

Future Planning in Design and Construction

When the key informants were asked about what types of environmental practices will be implemented in any future planning in design and construction efforts at their resort area, five separate responses were mentioned. The most mentioned response (60%; *n*=9) was that their resort area had no plans of taking on any future design or construction

Table 14

Ski Resort Environmental Practices in the Area of Recycling

Practice	Number of Responses
General Recycling	100%; n=13
Fluids Recycling	46%; n=6
Materials Recycling	46%; n=6
Terracycle.net Program	7%; n=1
SSRP Program	7%; n=1

Note: Multiple responses allowed for each informant

projects. The majority of respondents stated their area was "built out" and all the land within their boundaries was in use. Other responses included "budget constraints" and "we are doing research right now."

The second most mentioned response (26%; *n*=4) involved the construction of new lodging facilities that were specifically LEED certified. LEED stands for Leadership in Energy and Environmental Design. Developed by the U.S. Green Building Council, the certification provides "independent, third-party verification that a building, home or community was designed and built using strategies aimed at achieving high performance in key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality" (U. S. Green Building Council, 2012). The respondents in this category were from two resort areas. Both are located close to the urban area of Salt Lake City and possess the monetary ability to achieve such a goal in LEED certified construction.

The remaining three responses were only mentioned once and were specific to a certain project or plan. They included adopting solar and geothermal energy, adopting

hydroelectric power to expand snowmaking, but still keeping it energy efficient, and retrofitting an existing lodge with updated heating and lighting elements.

Forest and Wildlife Management

When key informants were asked what environmentally sustainable practices their resort area undertook in respect to forest and wildlife management, seven different practices were mentioned. The first practice mentioned (53%; *n*=8) consisted of re-vegetation applications during the summer season. These efforts are undertaken in order to retain native plant and forest species in the area, and counteract any damages done during the winter months. The following is a statement from a key informant during an interview detailing the revegetation efforts their resort area undertakes.

> That is what we excel in, our area is 100% recovered native. A lot of scientific based research to help with those efforts. In general we plant one to two thousand trees a year just because of general reforestation due to the mining days. We plant about 3000 native plants a year as well and we hand pick native seed every fall and have a local horticulture grower grow for us. (Key informant, personal communication, Dec 19, 2012)

Key informants also mentioned the use of local foundations and organizations in enacting these projects. These were the programs cited in the environmental program section; Cottonwood Canyons Foundation, Summit Land Conservancy, and National Forest Foundation.

The second most (40%; *n*=6) mentioned practice that respondents deemed "environmentally sustainable" was the eradication of the spruce or bark beetle in the form of removing trees infected by the insect. The majority of respondents followed up with citing this practice as not an annual off-season pursuit. Rather, this practice is undertaken

"every few years" or respondents stated their resort area was currently "updating their beetle management plan and increasing research."

The third most mentioned practice by four areas (26%; *n*=4) consisted of following a natural resources management plan specifically created for their resort area. The resort areas varied in the type of plan they used. Three resort areas have natural resource management plans, written for them specifically by Dr. Jim Long, a forest management planner at Utah State University. The other resort area works closely with the U.S. Forest Service and completes National Environmental Policy Act (NEPA) papers and Environmental Impact Statements (EIS) whenever necessary. The four resort areas stated they update their management plans "every few years" to better reflect any changes in the area of forest and wildlife management. They also stated these plans were comprehensive, and covered wildlife, forest, invasive species and watershed management.

The other four practices stated by key informants were mentioned twice, or once. Tree thinning (13%; *n*=2) and erosion control (13%; *n*=2) were noted twice. Tree thinning is different from removing trees due to beetle infestation. This practice is undertaken to reduce the over-crowding of forested areas, which can result in trees competing for scarce resources. Erosion control was stated as a part of the natural resource management plans used by certain resort areas. The two practices mentioned once were unique to the specific resort area; they included land preservation and timber sale. The respondent offered a detailed description of the how exactly the land preserve is segmented stated here.

> So we have 5000 acres, only 485 of it are really developed for the ski resort area. About 900 acres is part of the family preserve; that is just protected land where there will be no development. 3300 acres are under protective covenants and I don't have the specifics on what those protections are. (Key informant, personal communication, Feb 28, 2012)

The timber sale consisted of selling trees removed from the specific resort area. Due to transportation costs, the resort area had been burning the trees in the past to save on monetary costs. Through this timber sale the local community came to the area, paid a discounted amount for the timber, and transported the timber away. The respondent stated, "With the timber sale, at least someone could use the wood. It was nice seeing trucks go out with the wood on them, rather than burning it." Table 15 details all the environmental practices stated by key informants that their resort area undertakes in the area of forest and wildlife management.

Table 15

Ski Resort Environmental Practices in the Area of Forest and Wildlife Management

Practice	Number of Responses
Re-Vegetation	53%; n=8
Spruce/Bark Beetle Management	40%; n=6
Resort NR Management Plan	26%; n=4
Tree Thinning	13%; n=2
Erosion Control	13%; n=2
Land Preservation	6%; n=1
Timber Sale	6%; n=1

Note: Multiple responses allowed for each key informant

Education and Outreach

Key informants were asked to respond whether their resort area participated in any education or outreach efforts in regards to environmental sustainability. The large majority of respondents (60%; *n*=9) stated their ski resort area did not participate in any education or outreach efforts specifically related to environmental practices. The remaining responses were unique to the specific ski resort area.

Two respondents from separate resorts (13%; *n*=2) cited their involvement with the Tour with a Ranger Program through the Cottonwood Canyons Foundation. This program consists of volunteer led tours of the resort areas year-round and serves to help people become more aware of the unique ecology, watershed, wildlife, and other various environmental aspects of the area (Cottonwood Canyons Foundation, 2011). Two other respondents from separate resort areas (13%; *n*=2) stated the use of newsletters, classes, and events internally operated with their resort area in order to make employees more personally environmentally aware, and also knowledgeable of the environmental practices undertaken by the resort in which they are employed.

The remaining three education or outreach practices were singular responses and unique to each resort area (6%; *n*=1). One was stated as a "skicology" program. This involves taking visitors on a certain ski run in which patrons are educated about the various ecological aspects of the resort area through the use of interpretive signs and a volunteer leader knowledgeable on the subject. Second, was a community cleanup day in which local community members visited the resort to help in cleanup efforts. Attached to this was the ability for visitors to learn about the ecology of the resort area. Lastly, one respondent's resort area had an education room in their lodge solely dedicated to the

environmental practices of the U.S. Forest Service. The information in this room is continually updated.

Question 12: *Where do you go for credible information on environmentally sustainable ski resort area practices?*

Responses to this question by the key informants resoundingly pointed to the use of the Sustainable Slopes Program through the National Ski Area Association as a credible source on environmentally sustainable ski resort area practices (93%; *n*=14). Some respondents (57%; *n*=8) expanded upon the use of this source and stated its value as an "educational tool in being able to see what other resorts are doing in environmental practices." Twenty eight percent (*n*=4) of respondents used the program to research new innovations and gain further information resources. This high response to the use of the Sustainable Slopes program matches with the positive response given by key informants in the previous question regarding experience with these programs.

The second most mentioned response key informants stated was researching the environmentally sustainable practices of other ski resort areas throughout the United States (46%; *n*=7). These respondents cited Aspen, Vail, Park City, and Whistler Blackcomb as "industry leaders" in the area of environmental sustainability and, "They have lead the charge, we look to them as the next great thing we should be striving towards."

The third most mentioned response (40%; *n*=6) was the use of internal/word-of - mouth information on environmentally sustainable ski resort area practices amongst resort area employees. The following is a comment made by a key informant, which reflects the use of this information source.

> I think there are quite a few people employed here who are interested in that topic so they bring a lot to the table. We basically have a lot of good internal resources and everybody is on the same page as far as enacting these practices and moving forward with them. (Key informant, personal communication, Feb 28, 2012)

Respondents in this category also mentioned the use of "green-team" members in different departments of their resort area. These team members were tasked with researching innovative environmental practices within their department and bringing ideas to implicate in this area to quarterly meetings.

The remaining information resources were stated twice, or once. Rocky Mountain Power and its Blue Sky Program were noted twice as resources (13%; *n*=2). The resources receiving one response (6%; *n*=1) were the Environmental Protection Agency, Ski Utah, and the Forest Service. Table 16 details the information sources mentioned by informants.

This question served to clarify what information resource Utah ski resort areas are using when researching environmentally sustainable ski resort area practices. The Sustainable Slopes Program through NSAA surfaced as an education and information program from which these Utah based ski resort areas can gain valuable insight into ski resort environmental practices and how they may be applied to their specific resort area.

Table 16

Credible Information Sources on Environmentally Sustainable Ski Resort Area Practices

Source	Number of Mentions
Sustainable Slopes (NSAA)	93%; *n*=14
Other Ski Resort Areas	46%; *n*=7
Internal/Word of Mouth	40%; *n*=6
Rocky Mountain Power	13%; *n*=2
Ski Utah	6%; *n*=1
U.S. Forest Service	6%; *n*=1

Note: Multiple responses allowed for each key informant

Future Plans in Environmental Sustainability

Question 13: *Can you describe to me any projects your resort area is currently working on that focus on environmental sustainability?*

Earlier in the interview, key informants were asked to expand on the environmentally sustainable practices their resort would use in *future design and construction*. To build on that category, this question was added in order to allow respondents to cite any projects involving environmental sustainability their resort area was working on that did not fall under the category of *future design and construction*.

Responses to this question were mixed and variable. This is understandable considering the unique nature of each Utah ski resort area, and the various stages these could be at in implementing any projects with a focus on environmental sustainability. The project most mentioned was the researching of the possibility of installing wind, geo-thermal, or hydroelectric on-site at their ski resort area (26%; *n*=4). These respondents were not from four different resort areas, just two. These two areas are located close to urban Salt Lake City, and receive a high number of year-round tourism and local visitation traffic. These areas possess the land, mechanical infrastructure, and monetary resources to complete a project of this nature.

The second response most mentioned was simply that "no projects" in the area of environmental sustainability were being worked on (26%; *n*=4). These respondents gave varied reasons for this including, "Currently it is not in our budget," and "I can't think of anything we are doing that focuses just on environmental sustainability." However, these

respondents were receptive in stating these projects were not being ruled out completely, just that none were currently in the developmental stage.

Increasing "day-to-day" environmental sustainability practices was cited by two of the informants from separate resort areas (13%; *n*=2). These types of practices include increasing recycling efforts, continuing to upgrade to more efficient lighting, and more focus on internal efforts to educate employees on the resort areas environmental practices. The future projects cited once (6%; *n*=1) were done so by three respondents from separate resort areas (20%; *n*=3) and were unique to each informants ski resort area. These included expanding snowmaking abilities due to higher efficiency equipment at a more affordable price, undertaking snowmaking on the resort area for the first time, and a much larger project involving the connection of a Cottonwood Canyons resort area to a Park City area resort via aerial gondola lift access. This last project was cited as overall environmentally sustainable based on the fact that the gondola lift would be built with helicopters, thus eliminating the need for roads to be built for installation, and the lift would reduce automobile traffic amongst the resort areas and thus cut down on pollution.

Question 13b: *Do you involve other community members, local businesses, stakeholders, or interest groups in your planning process?*

When asked: *Do you involve other community members, local businesses, stakeholders, or interest groups in your planning process?,* every key informant indicated they involved various local entities in their planning process (100%; *n*=15). Entities mentioned were varied, numerous, and largely based on the geographical location. Those resort areas based in the Salt Lake City or Park City areas worked closely with the county and state offices of the area, as well as local non-profit organizations and power

companies. Ski resort areas more removed from this epicenter cited working with state or county offices, or a land management agency for the area, usually the U.S. Forest Service. The larger the resort area the more entities involved in the planning and implementation of environmental practices at the resort area. Smaller resort areas involved state, county, and federal land management agencies most of all in their environmental practice planning process; local non-profits or businesses were rarely involved with the smaller resort areas.

Question 13c: *Do you see this as an effective way to address the issue of environmental sustainability amongst ski resorts in Utah?*

All key informants were asked this question as an extension of the previous. Considering all the key informants from every resort area involved other entities in their environmental sustainability planning process, all key informants (100%; *n*=15) stated that this collaborative approach was effective and useful. Statements included, "It is necessary," and "It is the only way to go as we move into the future." The following is a more extended comment from a key informant during an interview that details this perception.

> By involving partners early on you are making sure you are not going to make a big mistake in your planning process. You have done it right and have the best brains in the room so you can to collectively come to the best decision. (Key informant, personal communication, Jan 10, 2012).

Regardless of the entity, key informants from all resort areas were adamant about an integrated approach to environmental sustainability practices among the resort areas by which they are employed.

Question 13d: *Where do you see your ski resort area in 10 years in regards to environmentally sustainable practices?*

When key informants were asked where they felt their ski area would be in ten years in regards to environmentally sustainable practices, all respondents gave statements centered around an "increase" in environmental practices (100%; *n*=15). This was backed up by comments such as, "Things will just continue to improve and that in turn will help us improve," and "I think we are just going to keep getting better and better at what we currently do." Of note six respondents (40%; *n*=6) stated that in ten years they felt that their day-to-day environmental practices would be improved at an incremental pace, but no real large- scale changes would be made. This included improvements in recycling, water use, and energy use. No respondent saw their resort area undertaking a large-scale transformation in the area of environmentally sustainable practices.

Question 14: *Would your resort be willing to fund and support an extended phase of this project that will survey resort visitors perceptions of environmentally sustainable ski area practices?*

This was the final question asked to respondents on the key informant instrument. It was included in order to gather preliminary data on whether key informants and their ski resort areas would like to see the implementation of Phase 2 of this project (p. 5). It also served to help in finding possible funding entities willing to support this phase of the project.

Eight of the key informants (53%; *n*=8) stated "No" their resort area would not be interested in funding or supporting a survey effort looking at visitor perceptions of the environmentally sustainable practices of Utah ski resort areas (Table 17). Comments in this category centered on not wanting to change the visitor experience. This included, "We are already surveying visitors like crazy," and "We try not to survey our guests too

Table 17

All Informants Responses to Supporting or Funding a Visitor Survey on Utah Ski Resort Area Environmental Practices

Yes, Support Visitor Survey	47%; *n*=7
No, Do Not Support Visitor Survey	53%; *n*=8

much, they are already here on vacation." One key informant in this category expanded on the topic during the interview. Their response is detailed here.

> Our visitors are already being surveyed about why they come here, how they like it, etc. I think to put another person out there with another survey, is just another survey. I think the people that would take the five minutes to tell you the survey, are the people that would be interested in it in the first place. I have no interest in giving our guests another survey. (Key informant, personal communication, Jan 12, 2012)

Of the eight respondents, six (75%; *n*=6) came from two ski resort areas. When adding the location variable, four resort areas were not interested in the visitor survey. But, (47%; *n*=7) key informants stated "yes" they would like to see a survey implemented gauging visitor perceptions of the environmentally sustainable practices of Utah ski resort areas. Respondents in this category stated, "I would love to see the true data," and "It would be great to see what the visitors are thinking." In this category, four of the key respondents (57%; *n*=4), from separate resort areas were willing to pursue possible funding efforts to support the implementation of the visitor survey.

CHAPTER V

SUMMARY, DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

This project was undertaken in order to gain a better understanding of the current and future environmentally sustainable practices being undertaken by Utah ski resort areas, and the resort area key informants' perceptions and ideas surrounding these practices. The data gathered will be used to better inform the ski industry, tourism industry, general public, and other stakeholders in Utah of the environmentally sustainable practices of the Utah ski resort areas that these entities depend on to generate revenue and stimulate the local economy. These findings may serve to stimulate a more collaborative approach to Utah ski resort area environmentally sustainable practices in which multiple community stakeholders are involved in working on this challenge. It is also hoped this information could prove useful for other parts of the country where ski resort areas and their communities are dependent on each other to remain economically viable. Three research questions were established in order to reach these goals:

1. What is the current level of knowledge, awareness, and implementation of environmentally sustainable practices held by Utah area ski resort managers, personnel, and their visitors?

2. Do Utah area resort managers and personnel deem current environmental programs useful and effective in addressing the environmental practices of ski resort areas, or do new programs or ways of addressing this issue need to be utilized?

3. What future plans do Utah area ski resort managers and personnel have towards enacting more environmentally sustainable practices at their specific resort area?

Conclusions and recommendations generated from the findings of these research questions may give insights to help in fostering an approach to this issue in which more community stakeholders are involved, or will simply serve to increase environmental awareness.

Key Informants Current Level of Knowledge and Implementation of Environmentally Sustainable Ski Resort Area Practices

The first research objective is, *What is the current level of knowledge, awareness, and implementation of environmentally sustainable practices held by Utah area ski resort managers, personnel and their visitors?* The collection of data surrounding this research objective is important because previous research in this area has focused on other areas of the world such as Europe, Canada, and Australia. Research conducted in the United States has been on a small scale. For example, Scott, McBoyle, Minogue, and Mills (2006) collected similar data in the Eastern sector of North America. However, only six ski resort areas were included in the study, and were located in four different states (Scott et al., 2006). This produces rich data by making comparisons of ski resort area environmental practices geographically and relating it to effects on tourism dependent communities. This project expanded on the number of ski resort areas analyzed, but limited the geographical area to the state of Utah. Due to the unique nature of Utah having multiple ski resort areas so closely located to an urban area, and the local economy so heavily dependent on these areas to generate tourism dollars, it created an ideal setting to undertake this case study. By capturing the key informants' current level of knowledge, awareness, and implementation on this issue, a better understanding of the

specific efforts made by Utah ski resort areas on the subject of environmentally sustainable practices is gained. This benefits all parties involved including the ski industry, the general public, the tourism industry, and local businesses and communities vested in these resort areas to generate tourism revenue.

Key Informants' General Perceptions and Current Level of Environmentally Sustainable Ski Resort Area Practices

In general, key informants participating in this study had a well-balanced understanding and knowledge of their resort area's environmentally sustainable practices, as well as the environmental practices of other ski resort areas throughout the state. All informants are employed by ski resort areas that consider their business as enacting environmentally sustainable practices in various ways. When key informants were asked, *Does your resort currently engage in environmentally sustainable practices?* recycling was the most mentioned response (66%; *n*=10). However, other responses were given as well revealing that Utah ski resort areas are involved in a broad range of environmental practices.

When respondents were asked, *Do you feel enacting environmentally sustainable practices at ski resort areas has become an issue of mounting concern?,* coupled with whether this was a *high priority issue*, the majority of respondents viewed enacting these practices was of high to medium concern (79%; *n*=12). This indicates most key informants found that following environmentally sustainable practices at their resort area was an important part of resort business operations. This was also the time during the interview where informants began stressing the need to increase these environmental

efforts revealing it was an issue their resort area was giving more attention to and would continue to do so in the future.

To expand on this question, it was followed by, *What do you see as the biggest limitation to adopting more environmentally sustainable practices at your resort area?* As expected, the highest response (93%; *n*=14) was the monetary challenge involved with funding such projects or practices. There was no difference in this response when looking at resort size; respondents from both larger and smaller resort areas cited the monetary challenge. When it came to budgeting and funding, other efforts took precedence over environmental practices; such things as lift maintenance, guest safety, or snowmaking efforts. Some respondents did mention their resort area was concentrating more funding towards environmental practices in the future. Of note as well, is the low number of respondents stating "lack of staff time to focus on issue" (*n*=3). This may be explained by the fact that five resort areas in Utah employ "sustainability managers" specifically tasked with focusing on their resort's environmental practices. This is a positive sign; as ski resort area environmental practices are receiving more attention, resort areas are responding by creating positions around the environmental issue.

Overall, the key informants view environmentally sustainable ski resort area practices as valuable and important.

- They believe these practices are important for the health and longevity of the Utah ski and tourism industry.
- Cited that positive efforts were being undertaken to support the future development of these practices.

- Possess a well-balanced understanding of the challenges that surround these efforts, most notably the monetary challenges.

Key Informants' Perception of Visitor Views on Resort Environmental Practices

When key informants considered how visitors view the environmentally sustainable practices of Utah ski resort areas, responses can be categorized as "mixed." The majority of respondents (67%; *n*=10) felt they were not receiving visitors they would classify as more environmentally conscious; also a large majority (86%; *n*=13) felt visitors were not choosing their resort area over others based on environmental practices. The general consensus among the informants was the environmentally sustainable practices of a ski resort area were not a large factor in their decision to visit that resort. However, the majority of informants cited this might change in the future. Statements such as "society is becoming more environmentally aware" and "it is a growing factor." strengthened the perception that visitor viewpoints may change in the future.

Included in this category are the environmental marketing efforts of Utah ski resort areas. Although respondents felt visitors were not highly environmentally aware, and did not specifically decide to visit a ski resort destination based on their environmental practices, the majority of respondents (60%; *n*=9) currently had marketing efforts in place that focused on environmental sustainability. Along with these environmental marketing efforts, two thirds (*n*=10) of the respondents saw potential to grow the environmental niche of the tourism market in the Utah ski resort industry. Key informants responses to visitor views of environmental practices at Utah ski resort areas can be classified as "mixed" due to the diversity in the data presented. Also, a disconnect

could be present since information on ski resort visitor perceptions does not yet exist in the state of Utah. Key informants may largely be estimating how environmentally aware or concerned their visitors are, without any solid data on the topic. Although informants feel visitors currently are not highly environmentally aware or choosing resort areas based specifically on their environmental practices, the majority of resorts are undertaking marketing efforts focusing on environmental sustainability, and they see the potential to grow this sector of the tourism market.

To summarize the key informants' general knowledge and current implementation of environmentally sustainable practices among Utah ski resort areas, and visitor views of these actions, informants all come from resort areas involved in environmentally sustainable practices, and all have a solid foundational knowledge of these practices. They show support for increased environmental practices in the future and have a positive perception this will happen. In regards to visitor views on the matter, it is currently considered a low priority issue, but through marketing efforts and increased environmental awareness, this niche of visitors is perceived to have potential for growth. Utah ski resort areas enact various environmentally sustainable practices.

According to key informants responses:

- Environmentally sustainable practices are important to the daily operations of Utah ski resort areas.
- A high or average concern is placed on environmental practices by Utah ski resort areas.
- Implementing these environmental practices will increase in the future.

- Resort area visitors currently do not view ski resort area environmental practices as highly important.
- Resort area visitors are not choosing resorts specifically based on their environmental practices.
- Utah ski resort areas are increasing marketing efforts focused on environmental sustainability.
- Potential exists to grow the environmental niche of the tourism market.

Ski Resort Area Environmental Programs

The second research objective is to *determine whether Utah area resort managers and personnel deem current environmental programs useful and effective in addressing the environmental practices of ski resort areas, or do new programs or ways of addressing this issue need to be utilized?* Given the relatively high level of Utah ski resort areas participation in environmental programs (60%; *n*=9), most notably the Sustainable Slopes Program through NSAA, the majority of respondents find these current programs to be useful and effective. Respondents found these national programs to be effective as an educational rather than marketing type tool. They were mainly used to gather information on what other resort areas in the United States were doing in regards to environmental sustainability, or to research new resort environmental initiatives. Informants also found high value in local programs such as the Rocky Mountain Power Blue Sky Program (46%; *n*=7) and the Cottonwood Canyons Foundation and Summit Land Conservancy (26%; *n*=4). The local nature of these programs is important to informants. Responses included, "Sustainability is not just about

the environment, it is also about sustaining the community, so we need to play our part in keeping those relationships." Combined, informants found both local and national programs to be useful and effective; informants also cited their experience with these programs as completely positive (100%; *n*=13).

To expand on this notion, respondents were asked, *do you see these programs as important for the future planning of environmentally sustainable practices in the ski resort areas of Utah?* All respondents (100%; *n*=15) cited these programs, both local and national, as important in any future planning efforts. No mention was made of new programs needing to be created to fill a void; instead respondents stressed the value of a balance between an offering of both local and national environmental sustainability programs for Utah ski resort areas.

To summarize the key informant responses related to participation in environmental sustainability programs for Utah ski resort areas according to key informant responses are:

- High participation in ski resort environmental sustainability programs on both a national and local level.
- Value is held in both national and local programs.
- Environmental sustainability programs are deemed as useful and effective.
- Experience with environmental sustainability programs has been positive.
- Environmental sustainability programs are helpful in future planning efforts.
- New environmental programs focusing on environmental sustainability in ski resort areas do not need to be created.

Resort Area Future Plans with Environmentally Sustainable Practices

The third research objective is to determine *what future plans do Utah area ski resort managers and personnel have towards enacting more environmentally sustainable practices at their specific resort area?* This objective was important so as to be able to relate the data collected in this category back to the ski industry, tourism industry, and local businesses and communities. A solid understanding of what environmentally sustainable practices Utah ski resort areas are pursuing in the future benefits the stakeholders and entities vested in the success of these resort areas to generate tourism revenue.

Key informants were first asked, *can you describe to me any projects your resort area is currently working on that focus on environmental sustainability?* Responses to this question were variable. Respondents from the larger ski resort areas in Utah described implementing large-scale projects such as converting their resort area to wind energy, hydroelectric, or geothermal power (26%; *n*=4). Respondents from the smaller scale resort areas focused more on citing their day-to-day improvements in environmental practices (33%; *n*=5). This included increasing recycling efforts, reusing materials whenever possible, upgrading to more energy efficient lighting, and decreasing snowmaking when possible. Respondents from both large and small resort areas remarked on the continuous monetary challenge involved with taking on future projects focused on environmental sustainability. Budgeting efforts are often put elsewhere, or other projects receive precedence over those of an environmental nature. Regardless of

resort size or budget, all informants stated their resort area was working towards either enacting new environmental practices, or improving upon existing ones.

To further understand where other stakeholders and entities related to resort environmental practices respondents were asked, *do you involve other community members/local businesses, stakeholders, or interest groups in your planning process?* All respondents from all the resort areas stated they did so (100%; *n*=15). The majority stated involvement with local land management agencies, recycling groups, or non-profit organizations. The high response rate by respondents suggests that ski resort areas in the state of Utah are closely connected with their local communities and organizations. This points to a relationship similar to that of European ski resort areas and their local communities. As mentioned in the literature review, through the EU-Eco-Audit, European ski resort areas foster an atmosphere in which employees, and local community members and businesses work collectively to approach the issue of environmentally sustainable resort area practices. This is based on the fact that local community members and businesses are closely connected to these resort areas based on their economic value to the community. Thus, employees and local community members or businesses are vested in the environmentally sustainable practices of their local resort area in order to ensure it continues to keep the community economically viable into the future (Probstl, 2006). Interestingly unlike Europe where the majority of resorts are locally owned and operated, of the eleven Utah resorts included in this study, seven are corporately owned (63%) by entities not located in the state of Utah. Further investigation regarding the relationship with these corporately owned Utah ski resort areas and local community entities might yield different results. Presenting this question to Utah based community

members and businesses may provide an alternate perception to how well this issue is approached in a collaborative nature.

Logically, the next question asked was, *do you see this as an effective way to address the issue of environmental sustainability amongst ski resorts in Utah?* As expected, each key informant (100%; *n*=15) regarded this approach as effective and important. This indicates a desire for informants and their ski resort areas to continue working collectively with local community members and organizations in the field of future environmentally sustainable resort area practices. Respondents cited this collaborative approach as "necessary" and "we don't know how else to do it." This high response rate bodes well toward more collaborative planning efforts.

The final question was, *where do you see your ski resort area in 10 years in regards to environmentally sustainable practices?* Responses in this area were as expected; key informants stated their environmental efforts would continue to improve, and included more involvement from the local community and its stakeholders. When asking this question, the trend continued to show that resort areas were mainly pursuing the improvement of their day-to-day environmental practices, rather than large-scale practices. This hinged mainly on monetary constraints allowing these areas to enact these types of projects. When applying the concept of Diffusions of Innovations Theory to this segment of the analysis, which is the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 2003), all the key informants expressed a desire to adopt more environmentally sustainable resort practices as quickly and effectively as possible, while involving multiple departments in the process. However, the central challenge to efficiently

adopting these innovations is the monetary limitations. When Utah ski resort areas have the monetary means to undertake a project focusing on environmental sustainability, they quickly take it on and diffuse the innovation throughout the multiple departments of their resort area. When monetary challenges exist, or other projects take precedence, adopting these practices can be put at a standstill.

To summarize, the key informants had a positive perception their resort area would increase environmentally sustainable practice into the future and showed support for continued involvement of local entities. According to informants' responses:

- All resort areas involved in the study plan to increase environmentally sustainable practices, when monetarily feasible.
- All resort areas involved in the study involve local community organizations and stakeholders in their environmental practice planning process.
- An interdisciplinary planning process is considered effective.
- Most Utah ski resort areas will work toward improving current environmental practices over the next 10 years, rather than taking on large-scale projects.

Recommendations

As previously stated, this study is intended as a case study providing an in-depth analysis of the current and future environmentally sustainable practices of Utah ski resort areas. This has been accomplished through analysis of data collected from interviews with key informants from Utah ski resort areas. It is hoped the recommendations provided will help to foster a more collaborative approach to environmental practices at ski resort areas in the state of Utah, among the ski resort industry, tourism industry, and

local community businesses and stakeholders. It is hoped through this effort all parties involved can maximize economic benefits, while minimizing environmental impacts.

Recommendation I: Expand the Number of Key Informants and Organizations Interviewed

The sample size (n=15) is somewhat small and not all Utah ski resort areas were included, however the data collected is information rich. These limitations presented themselves due to the exploratory nature of the study, and the time and funding constraints. A further limitation not anticipated, was the high number of respondents employed specifically as sustainability coordinators at five resort areas. However, this limitation is based on perception since informants provided in-depth and information rich interviews. Three resort areas were not a part of the study. One was not included in the study; the other was due to a possible informant not responding, and lastly a possible informant not being able to participate in the allotted time frame. A representative sample of Utah ski resort area personnel's views on their resorts current and future environmental practices was obtained but, minor gaps exist in the information gathered based on the sample size, and the inability of all ski resort areas in the state of Utah to be involved in the study. To achieve this first recommendation a continuation and expansion of Phase 1 of this project could complete this process. By interviewing a minimum of three key informants in separate departments from each ski resort area in Utah, including the three not participating in this study, a more complete understanding of Utah ski resort environmental practices and perceptions can be gained. Doing so would reduce bias in the sample, and fill the minor gaps in data collection mentioned.

Expansion of Phase 1 would involve administering a revised key informant instrument to other entities and organizations involved in the environmental practices of Utah ski resort areas, but not specifically employed by any one-resort area. This would include organizations mentioned in Table 10 (p. 51) and sources stated in Table 16 (p. 71) such as Rocky Mountain Power, the Cottonwood Canyons Foundation, Summit Land Conservancy, and Ski Utah. Completing data collection interviews with these organizations on the subject of environmentally sustainable ski resort area practices would serve in offering a different perspective on the issue. Furthermore, it would provide valuable information and a separate viewpoint when analyzing questions such as, *Do you involve other community members/local businesses, stakeholders, or interest groups in your planning process?* and *Do you see this as an effective way to address the issue of environmental sustainability amongst ski resort areas in Utah?* Completing Phase 1 on a more expanded and extensive would serve to gauge how local communities and organizations with a vested interest in Utah ski resort areas perceive these areas environmental practices. Completion of this recommendation would hinge on the funding and time efforts provided for its achievement.

Recommendation II: Successful Completion of Phase 2 of the Project

As stated earlier, Phase 2 of this project would consist of an intercept survey administered to resort area visitors to gauge their environmental attitudes and level of importance placed on ski resort area environmental practices. This would encompass a large sample of visitors to all Utah ski resort areas.

Key informants in Phase 1 of this study felt Utah ski resort area visitors had a low level of concern for resort area environmental practices, and a low level of concern in regards to destination choice. However, the majority of Utah resort areas currently markets their environmental practices (60%; *n*=9), see the potential to grow the environmental niche of the tourism market (66%; *n*=10), and would like to see data collected from a visitor survey (47%; *n*=7).

It is clear through the analysis of this study's data that completion of Phase 2 of the project would serve to fill a gap in the information collected. Although key informants in this study felt visitor perceptions of resort area environmental practices to be a low priority concern, providing these key informants and their resort areas with this information may prove otherwise. This opinion held by key informants is based on opinion and perception, not on collected data or research. Data collected on visitor views of Utah ski resort area environmental practices may reveal that visitors have a vested interest in the practices undertaken by these areas. It may also serve to help ski resort areas to further group their visitors for marketing and demographic purposes, and properly measure and categorize their clientele. This information could prove beneficial to the ski areas, ski industry, and tourism industry of Utah in regards to future marketing efforts. Lastly, completion of this phase may prove to strengthen the collaborative approach where multiple entities are involved in the environmentally sustainable practices of Utah ski resort areas. Visitors may become more environmentally aware and express desire to be involved in resort environmental efforts. Considering that an in-depth analysis of Utah ski resort area visitors' perceptions of environmentally sustainable practices at resort areas has never been conducted, the data gathered might prove valuable

since it is an avenue of research that has never been pursued. Completion of Phase 2 of the project is largely contingent on funding sources in order to enact the data collection and analysis process. Of the key informants interviewed, seven of the fifteen supported enacting Phase 2 of the project.

Recommendation III: Expand the Scope of the Project

The third and final recommendation is to expand the scope of the project. This third recommendation originated from the key informants' input in regards to the large majority expressing a positive experience with these programs, and requesting a continued balance of local and national programs focusing on the environmentally sustainable practices amongst U.S. ski resort areas (Table 11, p. 53). Informants expressed a desire for these programs on both levels to continue, without mention of the creation of any new programs. A way to achieve this balance would be a geographical expansion of this project that clusters states together, however it avoids a national size study area. An example would be the inclusion of the state of Colorado into the project to coincide with the state of Utah, the "Rockies Territory." Through the conducting of Phase 1 and Phase 2 of this project in neighboring states, an avenue of improved information sharing and communication on environmentally sustainable ski resort area practices may be further strengthened. Furthermore, Colorado is similar to Utah in supporting its economic stability through tourism dollars generated from visits to ski resort areas throughout the state. Coupling the states together as a study area may prove to generate marketing and collaboration ideas on the environmental practices of ski resort areas among the tourism and ski industries of both states. Other possible states to pair

together into study areas would be California and Nevada, Idaho and Montana, and Oregon and Washington. This pairing creates a balance among local and national programs. It would still foster a grassroots approach of a relatively small study area, however it would be beneficial in creating an atmosphere where neighboring states work together collaboratively on ski resort area environmental efforts.

Key informants identified their experience with these environmental programs as positive (86%; *n*=13) and beneficial in future planning efforts (100%; *n*=15). By expanding the scope of this project to include other states, a gap could be filled between state, regional, and national programs. Ski resort areas, the ski industry, and tourism industry in one state can look to neighboring states with similar tourism based economies, and collaborate and share information together to effectively address the issue of environmental practices amongst U.S. ski resort areas.

Conclusion

This study was largely exploratory in nature and consisted of gathering new data on the environmentally sustainable practices of Utah ski resort areas. It was geared toward understanding the current and future implementation of these practices by Utah resort areas, the effectiveness of environmental programs centered around this topic, and completed in order to offer the collected information to interested parties such as the ski industry, tourism industry, and community members and stakeholders of Utah. Brief summaries from the results of this study are:

- The key informants in this study define environmentally sustainable ski resort practices in a very broad context and included practices that could be deemed

sustainable or not, depending on perception. The large number of key informants (92%; *n*=12) citing high efficiency snowmaking as an environmentally sustainable practice in the area of water use proved to be the most surprising. While in this study it was highly regarded as a storing mechanism, key informants rarely mentioned the energy output or natural resource alterations required to produce the artificial snow. While these actions may contribute to spring runoff and show benefit in years of drought, does this outweigh the effects on the natural environment and the energy used to do so? In the area of forest and wildlife management, the number of informants (40%; *n*=6) citing spruce/bark beetle eradication as an environmental practice was surprising as well. This practice has been present for a long time and is not unique to ski resort areas. Land controlled under the U.S. Forest Service, Bureau of Land Management, and other land management agencies have undertaken this form of management to protect forested areas for decades. Thus considering the management of spruce/bark beetles at Utah ski resort areas an environmentally sustainable practice is largely based on perception. The use of the term "environmentally sustainable practices" may need to be more clearly defined and properly explained in order to receive responses from the key informants that correctly fit into the category.

- No specific standards exist in which to gauge how effectively Utah ski resort areas are working on environmentally sustainable practices. The high response rate citing the Sustainable Slopes Program (60%; *n*=9) as the primary program participated in and used, as a credible information source is an issue in which bias may be present. This is based the fact that under this program, ski resort areas

self-assess their environmental practices and submit a report to the National Ski Areas Association that runs the program. Since this program does not possess a specific standard of rating, resort areas may improperly use this program to promote their environmental practices. A more in-depth assessment of the programs used by Utah ski resort areas including an examination of past and present reports, may serve to create a better understanding of just how Utah ski resort areas choose to report, reveal, and market their environmental practices.

- Improved communication and collaboration is the vehicle for Utah ski resort areas continued improvement and adoption of environmentally sustainable practices. Opportunities to take on an even more collaborative approach where more community entities are involved in this issue could be established. These types of opportunities would include the dissemination of data collected from completion of Phase 1, and potentially Phase 2 of the project, to the Utah ski industry, tourism industry, and any other interested stakeholders. This dissemination may occur through the presentation of results at a meeting involving all entities mentioned, or the publication and presentation of the results of this study in various academic journals, environmental publications, or conferences and symposia. Undertaking all avenues available to present the findings of this study would serve to further strengthen the collaborative nature of approaching this issue.
- Pending funding sources, the undertaking and completion of Phase 2 of the project may prove more beneficial to the ski resort and tourism industry of Utah than perceived in the results of Phase 1 of this study. Completing this phase provides an alternate viewpoint on the issue of environmentally sustainable ski

resort area practices. The information may also serve to provide Utah ski resort areas with valuable data on their conscious ski area visitors that they may turn into effective marketing efforts. Expanding the sample size to include the non-participating resort areas, other departments, and local organizations may reveal further data on visitor perceptions of Utah ski resort area environmental practices.

Future Research

The key informants in this study had a solid grasp and understanding of the environmental practices of Utah ski resort areas, their future development, and effects on the local economy. However, as mentioned before with a relatively small sample size of fifteen informants, perceptions may be narrow and bias may exist. In future research, an expansion of this study to include a larger sample size and longer study period may prove beneficial in data collection. There is a need for a larger sample size in order to fully understand the perceptions on environmentally sustainable ski resort area practices from employees in various departments of Utah ski resort areas. This would increase the ability to generalize the results, and with the inclusion of the three non-participating resorts, increase the number of viewpoints and perceptions gathered.

Due to this phase of the study focusing solely on Utah ski resort area managers and employees as key informants, the views and perceptions expressed may be highly similar and complementary in nature. Expanding a survey instrument to include visitor and local stakeholders/organizations viewpoints on the issue of Utah ski resort area environmentally sustainable practices may serve to broaden the scope, and garner a more

complete understanding of the varied viewpoints on this issue. Stressed throughout this project has been the need to foster collaborative efforts and create awareness among all parties interested or involved in this issue. Through a continued expansion of the study area, sample size, and types of informants included, a stronger and more collaborative approach is likely to come to fruition.

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APPENDICES

APPENDIX 1

KEY INFORMANT INTERVIEW INSTRUMENT

Introduction:
Hello. My name is _____. Thank you for agreeing to meet with me. I am currently working on a study through Utah State University. In this study we are interested in determining the current level of awareness, knowledge, and implementation of environmentally sustainable practices at Utah ski resort areas. We are also interested in the future plans and motivation for implementing these practices possessed by Utah ski resort areas. Because of your position, knowledge, and involvement in Utah ski resort areas, we are very interested in your ideas, perspectives and insights on this particular subject.

The information you provide will be used only for our research, and you can be assured of complete confidentiality. The findings of this meeting will be used to create a number of "fact sheets" through Utah State University Extension on environmental sustainability throughout ski resorts in the state of Utah as well as assist in gathering baseline information on this issue.

If you would like additional information about this study, the person to contact is the project director: Dr. Steven Burr, Department of Environment and Society, Utah State University, 5220 Old Main Hill, Logan, UT 84322-5220.
Telephone: (435) 797-7094 Email: steve.burr@usu.edu

First, I would like to collect some background information:

Name:
Position and information about resort area they are employed by:
Length of time in this position:
Length of residence in Utah area:
Previous residence (if any):
Educational background:

Next, I would like to ask you some questions about your general practices and perceptions of environmentally sustainability within the ski resort area of Utah that you manage.

1. Does your resort currently engage in environmentally sustainable practices? (Specific practices/probe)
   If so, what kinds of practices?

   a. For how many years now do you feel your resort has engaged in these practices?

b. Over this time span, do you feel your resort area has increased, decreased, or remained the same regarding the effort and attention put toward environmentally friendly resort practices?

a) If so, why has this increased or decreased?

b) If increased, what has caused you to increase these practices?

2. Do you feel enacting environmentally sustainable practices at ski resort areas has become an issue of mounting concern?

a) Does this issue deserve more attention, or do you feel it is not of great concern?

3. Do you see enacting and continuing environmentally sustainable practices as a high priority issue?

4. What do you see as the biggest limitation to adopting more environmentally sustainable practices at your resort area?

a) In what ways could these limitations be reduced?

Now, I am going to ask you some questions regarding visitor perceptions of sustainable practices at your resort area.

5. In your opinion, are ski resort areas key tourist attractions in the state of Utah?

a) In your opinion, what is the role of the ski resort areas in the state of Utah's economy?

6. Are you familiar with the concept of eco-tourism? (If not, explain)

a) Do you feel you are receiving an increase in visitors that are more environmentally aware that you would categorize as "eco-tourists"?
b) Do you think they are choosing your resort area over others based on your environmental practices?

7.How much importance do you think resort visitors place on the environmentally sustainable practices of ski resort areas in the U.S.?

a) Why do you think that is?

8. Have you made conscious efforts to market or promote the unique or distinctive environmental practices your ski resort area undertakes in respect to tourism?

a) If so, what forms of marketing and promotion have you been using?

b) Do you use these promotions within the resort area as well as other media forms?

c) Do you feel these efforts have been effective?

9. Do you see potential to grow the eco-tourism niche of the tourism market within the ski resort industry of Utah?

a) If yes, how would you go about doing so?

Next, I would like to ask you some questions regarding your experience with any sustainability programs.

10. Has your ski resort area ever participated in any sustainability/environmental charter programs? Most notably the Sustainable Slopes Program (SSP)?

a) If yes, how would you classify your experience with these programs? (Positive, Neutral, Negative) plus Probe.

b) What was your reason for participating in this program?

11. Do you feel these programs are useful or effective?

a) In what ways are they effective or not effective? (Probe)

b) Do you see these programs as important for the future planning of environmentally sustainable practices in the ski resort areas of Utah?

c) Can you expand on the environmentally sustainable practices of your resort area in any of the following areas?

- Water use in snowmaking, facilities, wastewater, and quality management
- Energy use for facilities. (lifts, vehicles, lodging, etc)
- Recycling, re-use of products
- Future planning in design and construction
- Forest and Wildlife management
- Education and Outreach

d) What changes (if any) would you like to see in these types of programs? (Probe)

12. Where do you go for credible information on environmentally sustainable ski resort area practices?

a) What are your reasons for using these particular resources?

Finally, I would like to ask you some questions about your resorts future plans in regards to environmentally sustainable practices.

13. Can you describe to me any projects your resort area is currently working on that focus on environmental sustainability?

a) What is your reasoning for enacting these projects? (marketing, better the environment, use of grant money, etc.)

b) Do you involve other community members/local businesses, stakeholders, or interest groups in your planning process?

c) (If yes) Do you see this as an effective way to address the issue of environmental sustainability amongst ski resorts in Utah?

d) Where do you see your ski resort area in 10 years in regards to environmentally sustainable practices?

14. Lastly, would you be willing to fund and support an extended phase of this project that will survey resort visitors perceptions of environmentally sustainable ski area practices?

Will it be OK to get back in touch with you, if necessary, in order to verify any information. ***If yes,** ask respondent for his/her contact information **or** make sure we have the correct information on file.

APPENDIX 2

INTERVIEW SCHEDULE FOR KEY INFORMANTS

-15 Participants were interviewed
-3 resort areas did not participate in the study

12/7/2011

Key Informant #1
Energy Conservation Coordinator, Snowbird Resort
Face-to-Face Interview

12/19/2011

Key Informant #2
Sustainability Coordinator, Alta Resort
Face-to-Face Interview

1/5/2012

Key Informant #3
V.P. of Resort Operations, Snowbird Resort
Face-to-Face Interview

1/5/2012

Key Informant #4
Budget Director, Snowbird Resort
Face-to-Face Interview
1/10/2012

Key Informant #5
General Manager, Brighton Resort
Face-to-Face Interview

1/12/2012

Key Informant #6
Director of Operations and Environmental Affairs, Park City Resort
Face-to-Face Interview

1/17/2012

Key Informant #7
Resort Sustainability/Mountain Dispatch Manager, The Canyons Resort
Face-to-Face Interview

1/25/2012

Key Informant #8
CEO and Co-owner, Eagle Point Resort
Telephone Interview

2/7/2012

Key Informant #9
Executive Assistant to President and General Manager, Deer Valley Resort
Face-to-Face Interview

2/20/2012

Key Informant #10
Director of Marketing and Public Relations, Solitude Resort
Face-to-Face Interview

2/21/2012

Key Informant #11
Resort Maintenance Manager, Deer Valley Resort
Telephone Interview

2/24/2012

Key Informant #12
Director of Marketing, Deer Valley Resort
Face-to-Face Interview

2/28/2012

Key Informant #13
Guest Services and Green Team Manager, Sundance Resort
Telephone Interview

3/5/2012

Key Informant #14
Mountain Operations Manager, Beaver Mountain Resort
Face-to-Face Interview

3/6/2012

Key Informant #15
Public Relations and Marketing Manager, Snowbasin Resort
Telephone Interview